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SPECIAL EDUCATION TEACHERS' AND PROFESSIONAL LEARNING PROVIDERS' PERSPECTIVES ON THE FEATURES OF EFFECTIVE PROFESSIONAL LEARNING: A Q METHODOLOGY STUDY

Allison Schwartz

ACCEPTANCE

This dissertation, SPECIAL EDUCATION TEACHERS' AND PROFESSIONAL LEARNING PROVIDERS' PERSPECTIVES ON THE FEATURES OF EFFECTIVE PROFESSIONAL LEARNING: A Q METHODOLOGY STUDY, by ALLISON J. SCHWARTZ, was prepared under the direction of the candidate's Dissertation Advisory Committee. It is accepted by the committee members in partial fulfillment of the requirements for the degree, Doctor of Philosophy, in the College of Education and Human Development, Georgia State University.

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Truscott, S. D., **Schwartz, A. J.**, & Psimas, L. (2012, February). Professional learning to improve FBAs in an urban school district. Poster presented at the National Association of School Psychologist 2012 Annual Convention, Philadelphia, PA.

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Albritton, K. J., **Schwartz, A. J.**, Psimas, L., & Truscott, S. D. (2011, February). Professional learning and teacher perceptions of problem solving self-efficacy. Paper presented at the National Association of School Psychologist 2011 Annual Convention, San Francisco, CA.

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Peters-Bierwirth, K. M., Blumberg, F. C., & **Schwartz, A. J.** (2008). Does cartoon violence beget aggressive behavior in real life? An opposing view. Early Childhood Education Journal, 36, 101-104.

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McMahon, H. G., & **Schwartz, A.** (2006, June). School counseling interns using data to change systems: Closing the gap, increasing 1st grade CRCT scores at a predominantly African American elementary school. Paper presented at the Seventh Annual National Center for Transforming School Counseling Summer Academy, Deerfield Beach, FL.

SPECIAL EDUCATION TEACHERS' AND PROFESSIONAL LEARNING PROVIDERS' PERSPECTIVES ON THE FEATURES OF EFFECTIVE PROFESSIONAL LEARNING: A Q METHODOLOGY STUDY

by

Allison J. Schwartz

Under the Direction of Dr. Stephen Truscott

ABSTRACT

Students with disabilities (SWDs) continue to struggle with schooling and beyond. While strong instruction and evidence-based practices can substantially improve outcomes for SWDs, many special education teachers (SETs) are not prepared to implement the changes necessary to achieve these results. Professional learning (PL) has been prioritized by legislators, educators, and researchers as an intervention to improve instructional practices of SETs. While Learning Forward (2011) has presented the *Standards of Professional Learning*, little information is available on how these evidence-based standards align to the needs of special education and account for SETs' unique preparation and roles. This study employed Q-Methodology, which is a structured study of human subjectivity, to explore SETs' and special

education PL providers' (PLPs') perceptions about the important factors of effective SET PL, which was defined as participants learning and then using the PL content in their school setting. This study asked, "What do SETs and special education PLPs believe are the most and least important factors to SETs successfully using the content from their PL experiences in their school setting?" to identify and describe the participants' perspectives and explicate possible patterns related to their specific roles. Results of the Q methodology indicated three distinct factors emerged for both Consumers (i.e., SET participants) and Providers (i.e., special education PLP participants), providing similarities and differences between audience and provider viewpoints. All participants perceived successful SETs' PL included being based on SETs' SWDs' needs, incorporating active engagement and sustained implementation support, and requiring participation (i.e., no choice). Within the Consumers' perspectives, there was little concern for the larger district, as they attributed successful PL largely to its applicability to SETs' SWDs and classroom needs. They were most interested in specific interventions, adequate time for implementation (i.e., not training), and leadership support for collaboration with general education teachers. The Providers' beliefs emphasized SETs' PL fitting into the overall educational system (i.e., context; e.g., school, district). Providers were primarily interested in adequate school resources and support, leaderships' involvement, facilitators' expertise, and modifying the PL to meet school/district needs. Results are discussed and implications for future directions in research and practice are suggested.

INDEX WORDS: Professional learning, Professional Development, in-Service, Special Education, Teachers, Professional learning providers

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LIST OF ABBREVIATIONS

APA	American Psychological Association
Consumers	Special education teacher participants
GET	General Education Teacher
IDEIA	Individuals with Disabilities Education Improvement Act
NASP	National Association of School Psychologists
NCLB	No Child Left Behind
PL	Professional Learning (i.e., Professional Development)
PLP	Professional Learning Provider
Providers	Special education professional learning provider participants
SESS	Special Education Support System
SET	Special Education Teacher
SWD	Student with Disabilities

1 PROFESSIONAL LEARNING FOR SPECIAL EDUCATION TEACHERS: WHAT SCHOOL PSYCHOLOGISTS

Introduction

In essentially every public school across the United States, special education teachers (SETs) are expected to provide students with disabilities (SWDs) intensive and appropriate instruction necessary to meet educational standards and recent federal mandates. With appropriate supports and services, the majority (i.e., 80 to 85%) of the 6.5 million SWDs nationwide (Aud et al., 2011) should be able to attain the same success as their non-disabled peers (Cortiella, 2007; Thurlow, Quenemoen, & Lazarus, 2011); however, as a group, they continue to lag significantly behind on measures of in- and post-school success. For example, on the 2011 National Assessment of Educational Progress, 68% of 4th graders with disabilities scored at the below basic level in reading compared to only 30% of their peers who are non-disabled. This significant gap also existed for mathematics and 8th graders (U.S. Department of Education, National Center for Education Statistics [NCES], 2011a; 2011b). Several meta-analyses report ambiguous overall effects of special education for high-incidence disabilities (Burns & Ysseldyke, 2009; Kavale, 2005; Morgan, Frisco, Farkas, & Hibel, 2010). For example, in a longitudinal study of a large-scale nationally representative sample of U.S. schoolchildren, Morgan and colleagues found special education yielded a small positive effect on children's leaning-related tasks but overall had either a negative or statistically non-significant impact on children's learning or behavior. Furthermore, the National Center on Educational Outcomes (Wu, Liu, Thurlow, Lazarus, Altman, & Christian, 2012) identified receiving special education services as one of the characteristics of students who persistently performed poorly on state assessments. These inferior outcomes continue into high school and adulthood. Studies reveal

that compared to their peers who are non-disabled, SWDs drop out of high school at twice the rate without earning a diploma or GED, have lower rates of postsecondary schooling, higher rates of unemployment, and are more likely to be involved with the criminal justice system (Newman et al., 2011).

A recent series of federal legislation and policies aim to address these poor SWDs outcomes and increase accountability for special education achievement and teacher competency. The President's Commission on Excellence Special Education Report (Branstad et al., 2002) initially heightened focus on the outcomes in special education and advanced the view of SWDs as general education students first and foremost. Subsequently, No Child Left Behind (NCLB; 2002) and Individuals with Disabilities Education Improvement Act (IDEIA; 2004) mandated SWDs have access to curricula that meets state standards and be served in the least restrictive environment. Consequently, SWDs have been increasingly served in general education classrooms (e.g., inclusion settings). Additionally, the more recent Every Student Succeeds Act (2015), continues to ensure SWDs have access to the general education curriculum as well as evidence-based interventions and practices, which requires SETs to know both pedagogy and content.

Current SETs

While quality teaching could support improved SWDs' outcomes, many SETs lack the content knowledge, pedagogical skills, assessment methods, and instructional/behavioral practices SWDs require (Brownell, Leko, Kamman, & King, 2008; McLeskey & Billingsley, 2008; Sindelar, Brownell, & Billingsley, 2010). Studies show effective SETs can identify specific academic and behavioral needs of SWDs, engage their students in corresponding evidence-based instructional and management practices, and produce significant student gains in

critical educational areas (Brownell et al.; Cook & Schirmer, 2006). Despite clear evidence that effective SETs improve SWD outcomes, school districts across the United States have struggled to recruit and retain these SETs for decades (Billingsley, 2011; Brownell, Billingsley, McLeskey, & Sindelar, 2012; Lang & Fox, 2003).

Issues related to training and practice contribute to SETs having the teaching profession's highest rate each year of either leaving the field or moving to a new position (i.e., 22% compared to 16% of all other teachers; Aud et al., 2011), which consequently is one of the biggest impediments to providing quality teachers to SWDs (Ingersoll & Smith, 2003). Alternative certification routes have attempted to address the shortage issue by easing entry into the special education profession; however, the reduced training requirements of these SETs often result in them being unprepared to handle the unique needs of SWDs, unable to deliver adequate evidence-based practices, and being twice as likely to leave the profession as those with more extensive preparation (Billingsley, 2004; Boe, Cook, & Sunderland, 2007; Brownell et al., 2008; McLeskey & Billingsley, 2008; Sindelar et al., 2010). SETs from many traditional preparation programs are also unprepared as they were trained broadly on effective teaching and classroom management rather than receiving the in-depth subject-matter and pedagogical knowledge now required to provide content area instruction (Brownell et al., 2012; Lang & Fox, 2003; Thurlow et al., 2011). Further, in general, SETs report regularly implementing non-evidence-based practices that fail to mitigate the effects of students' disabilities (Burns & Ysseldyke, 2009; Jones, 2009; Smith, Richards-Tutor, & Cook, 2010). Though effective special education interventions exist, they are underused and often poorly implemented (Kavale, 2005). Researchers have recently refocused their efforts to developing SETs' capacity and commitment to provide high quality, evidence-based instruction (Sindelar et al.).

Contextual factors in the schools compound the quality issues of current SETs. SETs need to have an extensive knowledge-base and skill-set to be able to teach across multiple academic subjects, grade-levels, and disabilities (Brownell et al., 2008). Further, while SETs historically worked in separate settings (e.g., resource rooms and self-contained classrooms), they are increasingly being asked to work with general education teachers (i.e., co-teaching), but lack necessary training in consultation, collaboration, and co-teaching (Lang & Fox, 2003; McKenzie, 2009; Mostert, 2011). School settings themselves can impede opportunities for growth and collaboration as some SETs continue to work in isolation with inadequate collaborative planning time, distant classroom locations, and few special education colleagues in the building (Billingsley, 2004; Leko & Bronwell, 2009). These contextual factors lead to increased SETs burnout, which recent studies highlight not only affects SETs' health but also SWDs outcomes. For example, students of disengaged and exhausted SETs frequently struggle behaviorally, socially and emotionally and less frequently achieve their Individual Education Program goals (Jennings & Greenberg, 2009; Ruble & McGrew, 2013).

Professional Learning for SETs

Professional learning (PL; e.g., professional development, in-service, etc.) has been identified as playing a key role in educational reform, instructional improvement, student gains, and teacher retention in special education (Billingsley, 2004; Billingsley, 2002; Landrum, Cook, Tankersley, & Fitzgerald, 2002; Sindelar et al., 2010; Waldron & McLeskey, 2010; etc.). Legislators, researchers, and educational organizations, such as the National Center for Learning Disabilities (2010), recommend SETs participate in ongoing PL to provide continuous development of new knowledge, skills, and evidence-based practices that maximize SWDs' success in the classroom. However, researchers have recognized the traditional, one size fits all,

expert-centered PL does not facilitate SETs' use of evidence-based practices (Klingner, 2004; Lang & Fox, 2003; McLeskey, 2011). Consequently, PL in special education is becoming more learner-centered (Blank & de las Alas, 2009; Desimone, et al., 2002; Guskey, 2003; Truscott et al., 2012) and utilizes many of the components of high-quality PL as identified in the general education literature (Brownell et al., 2008; McLeskey; Sindelar et al.). Unfortunately, implementation of high-quality PL is not widespread as schools continue to rely on the short-term, expert-centered programs that have been largely ineffective in changing teachers' practices (McLeskey; Wei et al., 2010).

One solution to increase the use of high-quality PL practices for SETs is to involve school psychologists in some part of the programs (Conoley, 2012; Horner, 2012; Lay, 2010). The purpose of this article is to highlight school psychologists' potential contributions to conducting PL that builds the capacity of SETs and, ultimately, improves SWDs' outcomes. I will first discuss why school psychologists should be involved in PL. Then I will review the research on evidence-based features of PL within the general and special education settings. The remainder of the article will identify competencies and strategies school psychologists can use to facilitate evidence-based PL for SETs.

Why School Psychologists Should be Involved in PL for SETs

Increased educational accountability, especially for SWDs, has reinforced the longstanding call for a paradigm shift in school psychologists' practices from focusing on special education classification to comprehensive service delivery (e.g., Bradley-Johnson & Dean, 2000; Fagan, 2000; etc.). To meet students' diverse and complex needs, practitioners need to expand their traditional roles providing direct and reactive services as "sorters" (i.e., testing for special education placement) and "repairers" (i.e., individual and group interventions) to also delivering

indirect services as “consultants” (i.e., meeting with professionals on work-related problems) and “engineers” (i.e., using skills at a systems level; Fagan & Wise, 2007). This broader vision of practice is outlined in the recently updated National Association of School Psychologists (NASP) *Model for Comprehensive and Integrated School Psychological Services* (*Practice Model;* 2010a). The *Practice Model*, which is aligned with standards for training and credentialing, represents official NASP policy of best practices in school psychology and describes a broad array of services that should typically be provided by school psychologists (Armistead & Smallwood, 2014).

NASP, through documents like the *Practice Model*, urges school psychologists to be leaders in systems’ change and utilize their specialized expertise in instruction, learning, mental health, and data-based decision making to have a greater impact in their schools (e.g., NASP, 2010a; Ysseldyke et al., 2006; etc.). This broader vision of practice emphasizes the importance of indirect services, prevention, and building system capacity to meet students’ academic and social-emotional needs. Gutkin and Conoley (1990) explained, “to serve children effectively school psychologists must, first and foremost, concentrate their attention and professional expertise on adults’’ (p. 212). In comparison to working with one student at a time, the indirect service delivery model is characterized by focusing services on adults (i.e., teachers and parents), who then utilize their newly acquired knowledge and skills to work more effectively with many students (Gutkin & Conoley). When school psychologists work in partnership with other educational stakeholders, such as teachers, they are more likely to make systems-level change and, consequently, have a greater impact on students’ needs (Ehrhardt-Padgett, Hatzichristou, Kitson, & Meyers, 2004).

Being involved in high-quality PL that builds the capacity of educators to meet the academic and social-emotional needs of SWDs is a clear opportunity for school psychologists to provide indirect and systems-level services that are valued contributions to their schools. As a type of organizational consultation (Gallessich, 1982), PL is a good investment of school psychologists' time and effort as it "can provide a vehicle to efficiently reach a large number of people in a short period of time" (McBride, 1985; p. 916). There are too many students in need of services for school psychologists to work individually with each one; but, if school psychologists share their specialized knowledge and skills with the SETs who work many SWDs daily, they can indirectly have a wider range of influence (Bradley-Johnson & Dean, 2000; McDaniel & Ahr, 1965). Not only has PL been promoted as an opportunity for school psychologists to indirectly address more students' needs, but it is also a vehicle for practitioners to broaden their presence in their schools and systems (Brown, 2008; McDaniel & Ahr). Being a part of PL could allow practitioners to increase their visibility, build relationships, and become active "team members" at the school-level, which may result in additional requests for other indirect services (e.g., consultation; Conoley & Conoley, 1992).

Many school psychologists reportedly seek this expanded role that includes indirect and systems-level services (e.g., Merrell, Ervin, & Peacock, 2011; Reschly & Ysseldyke, 2002), such as PL. Previous research has found that practitioners typically not only prefer to spend less time on assessment and more time on intervention and systems-organizational consultation (Filter , Ebsen, & Dibos, 2013; Hosp & Reschly, 2002; Reschly & Wilson, 1995; Merrell et al.), but also that their job satisfaction is highly related to the opportunity for them to engage in comprehensive services (VanVoorhis & Levinson, 2006). A recent national survey revealed practitioners are, in fact, engaging in more diverse direct and indirect practices; however, such

increases remain limited and inconsistent (Castillo, Curtis, & Gelley, 2012). For example, while school psychologists reported spending over one-third of their time (i.e., 39.6% of total) on systems-level services, facilitating in-service programs for educators only accounted for a small percentage of that time (2.8% of total time) and many practitioners reported not conducting any PL activities (29% conducted zero; Castillo et al.). The same study found that despite a decline in the number of psychoeducational evaluations conducted per school psychologist over the last two decades, school psychologists still dedicate the majority of their time to special education classification, such as 11.4% of time is focused on meetings for special education identification and placement (e.g., assessment, meetings, etc.; Castillo et al.). Thus, it appears many school psychologists who want to provide more indirect and systems-level services are missing opportunities by being a part of high-quality PL that supports SETs with whom they already spend a considerable amount of their time.

Research-Based PL

Participation in high-quality PL that includes collaboration with other special educators, application of research to practice, and constructive feedback can improve SETs' classroom instruction and SWD's achievement (Correa & Wagner, 2011; McLeskey, 2011). However, because limited PL research is specifically directed at SETs, special education relies on the consensus that has emerged in the general education literature about the essential features and conditions of PL associated with positive changes in educator knowledge, pedagogy, and student achievement (Brownell et al., 2012; McLeskey; Sidelar et al., 2010). Learning Forward (2011) in collaboration with 40 professional associations and education organizations recently compiled this research into the revised *Standards for Professional Learning*. As outlined in Table 1, the context, process, and content "remain the foundation for the seven standards" (Learning

Forward, p. 19) as all three areas need to be addressed to plan and facilitate effective PL that develops educators' knowledge, skills, practices, and dispositions to help every student, even SWDs, perform at higher levels (Learning Forward; see Table 1 for list of standards and their core elements).

Table 1

Learning Forward's (2011) Seven Standards of PL and the Three Core Elements Associated with Each Standard.

Focus Area	Definition	Core Elements
CONTEXT STANDARDS	Learning Communities refers to groups of educators that meet regularly to increase their own learning and that of their students.	• Engage in continuous improvement • Develop collective responsibility • Create alignment and accountability
	Leadership refers to leaders building the capacity of other educators, advocating for PL for staff, providing support for ongoing learning and leading, and participating in PL to enhance their own practices.	• Develop capacity for learning and leading • Advocate for PL • Create support systems and structures
	Resources refers to prioritizing, tracking, and coordinating all the costs required for educator learning (e.g., time, training, administration, travel, materials and facilities).	• Prioritize human, fiscal, material, technology, and time resources • Monitor resources • Coordinate resources
PROCESS STANDARDS	Data refers to using various sources of information to plan, monitor, and comprehensively evaluative PL.	• Analyze student, educator, and system data • Assess progress • Evaluate PL
	Learning Designs refers to planning the "how" of PL by applying adult learning theories and modifying according to the characteristics and needs of the context and participants.	• Apply learning theories and research • Select learning designs • Promote active engagement
	Implementation refers to using research on change, differentiated and sustained support, and constructive feedback to facilitate the high-fidelity application of PL practices in the school setting.	• Apply change research • Sustain implementation • Provide constructive feedback
CONTENT STANDARD	Outcomes to effective PL being content-focused, based on student curriculum and educator performance standards, and coherent with the system.	• Meet (educator) performance standards • Address (student) learning outcomes • Build coherence

Note. Adapted from *Standards for Professional Learning* (p. 61), by Learning Forward, 2011, Oxford, OH: Author.

Context standards of PL. The *context* standards refer to the essential conditions for high-quality PL, including opportunities to participate in *Learning Communities*, skillful and supportive *Leadership*, and sufficient *Resources* (Learning Forward, 2011). In particular, PL through which educators engage in continuous collaborative problem-solving about students' difficulties leads to improved and sustained teacher motivation, self-efficacy, knowledge, pedagogical practices, peer relationships, shared accountability, and student learning (i.e., *learning communities*; Lieberman & Miller, 2008; Saunders, Goldenberg, & Gallimore, 2009; Truscott et al., 2012). When school leaders ensure PL is available, aligned with other organizational systems and structures, and based on participant input, outcomes include increases in participation; changes in knowledge, practices, and participants' capacity to lead; and student learning (i.e., *leadership*; Berry, Turchi, & Johnson, 2003; Smith, Hofer, Gillespie, Solomon, & Rowe, 2003; Wahlstrom, Louis, Leithwood, & Anderson, 2010). Access to, quality of, and effectiveness of any PL depends on the availability of necessary staff (e.g., facilitators, coaches, and school leaders), materials (e.g., supplies and equipment needed for activities and implementation, facilities to meet, and access to technology), and time (e.g., for learning activities and ongoing collaboration; i.e., *resources*; Odden, 2011). Without the appropriate context that allows learning activities to flourish and support professional growth, even the most thoroughly planned and implemented PL program will fail (Learning Forward).

Process Standards of PL. The *process* standards help guide the development, implementation, and evaluation of effective PL and involve the formative and summative use of *Data*, appropriate *Learning Designs*, and substantial *Implementation* support (Learning Forward, 2011). Specifically, when schools continuously analyze and use student, educator, and system data to inform decisions about PL (i.e., *data*; Cassada, Stevens, & Wilson, 2005; Supovitz &

Klein, 2003), the PL programs are more relevant and useful. For professional growth to occur, PL programs need to adjust to the environment and participants' unique characteristics (Guskey, 2003) and utilize adult learning theories and other research-based learning processes such as active engagement reflection, modeling, discussions, writing, practice, and technology (e.g., *learning designs*; Merriam, Caffarella, & Baumgartner, 2007; Smith et al, 2003). Additionally, changes in knowledge and instruction require multiple sessions spread over time (Borko, 2004; Garet et al., 2001) with ongoing guidance and support (e.g., mentors and coaches) to enhance learning and address problems associated with transferring new skills to practice (i.e., *implementation*; Garet et al.,; Hochberg & Desimone, 2010; Merriam et al.). These process standards provide a guide for facilitators and schools to select and apply the most appropriate activities that will promote teacher PL (Learning Forward).

Content standard of PL. The *content* standard, which is focused on student and educator *Outcomes*, identifies goals of the PL program based on school data and research (Learning Forward, 2011). In particular, effective PL addresses the learning needs of students and the concurrent knowledge, skills, and teaching approaches to be acquired by educators (Learning Forward; Murray, 2013). When PL focuses on a specific subject or pedagogical knowledge about how students learn, participants are more likely to use the content in their classrooms and improve student learning (Borko, 2004; Blank & de las Alas, 2009; Desimone, 2009). Further, PL aligning with district/state and local standards, assessments, curriculum, and initiatives also increases the likelihood of implementation and long-term sustainability of the program (Garet et al., 2001; Penuel et al., 2007; Weiss & Pasley, 2006).

PL in Special Education

PL programs for SETs have started to include components aligned with Learning Forward's (2011) context, process, and content standards. To improve SETs' knowledge and the use of evidence-based practices, special education researchers recommend PL move away from traditional, expert-centered models that have proven ineffective (Lang & Fox, 2003; Klingner, 2004; McLeskey, 2011). Instead, PL experiences that include content-focused material, attention to school context (coherence), administrative support (leadership), sufficient time and materials (resources), practice with reflection and feedback (active learning), collaborative networks (learning communities), and sustained support for implementation have resulted in positive changes in SETs' practices and, sometimes, SWDs' knowledge (Klingner; Lang & Fox; McLeskey). Further, a small group of studies has highlighted the importance of coherence in PL of SETs (e.g., Brownell, Adams, Sindelar, Waldron, & vanHover, 2006; Dingle, Brownell, Leko, Boardman, & Haager, 2011). These studies emphasize addressing SETs' individual and contextual variables (e.g., content and pedagogical knowledge, motivation, instructional leadership, and cohesiveness with curriculum) to successfully influence learning and application of the PL content (Brownell et al.; Dingle et al.). Another special education effort promoted combining PL with implementation science (e.g., Cook & Odom, 2013; Klingner, Boardman, & McMaster, 2013; Odom, 2009; Odom, Cox, & Brock, 2013). These PL programs recommend matching the PL content to the context, strong leadership support, team building, and ongoing coaching and technical assistance to promote increased SET use of evidence-based interventions (Klingner et al.; Odom). While some recent PL programs for SETs are similar to Learning Forward's PL standards, containing the core components of effective PL and accounting for contextual and individual variables, most PL for SETs does not include such high-quality staff development (McLeskey; Wei, et al., 2010).

How School Psychologists can Support High-Quality PL for SET

School psychologists can expand their contributions to systems-level services by promoting and providing high quality evidence-based PL programs for SETs. To take advantage of these opportunities, school psychologists need more information about how their competencies and methods align with system-wide needs (Meyers, Roach, & Meyers, 2009). NASP's *Practice Model* (2010a) advocates for school psychologists to provide system-level services to enhance the capacities of educational personnel, which is entirely consistent with Learning Forward's (2011) call to "improve education practice and student results" (p. 6). The following sections provide examples of how school psychologists can implement NASP *Practice Model* domains to support Learning Forward's *Standards of PL* (see Figure 1) and provide high-quality PL that addresses SETs' unique needs. The examples are intended to assist school psychologists as they consider how to link their specific professional skills with effective *context*, *process*, and *content* standards of PL for SETs.

NASP (2010) *Practice Model Domains*	Learning Forward's (2011) *Standards of PL*						
	CONTEXT			PROCESS			CONTENT
	Learning Communities	Leadership	Resources	Data	Learning Designs	Implementation	Outcomes
1. Data-Based Decision Making and Accountability	✓			✓	✓	✓	
2. Consultation and Collaboration	✓	✓	✓			✓	
3. Interventions and Instructional Support to Develop Academic Skills							✓
4. Interventions & Mental Health Services to Develop Social & Life Skills							✓
5. School-Wide Practices to Promote Learning		✓	✓				
6. Preventive and Responsive Services		✓		✓	✓	✓	
7. Family–School Collaboration Services					✓		✓
8. Diversity in Development and Learning					✓		
9. Research and Program Evaluation			✓	✓		✓	
10. Legal, Ethical, and Professional Practice		✓		✓			

Figure 1. School psychologists' Implementation of Learning Forward's (2011) Standards of Professional Learning using NASP's (2010) Practice Model Domains.

School Psychologists Supporting the *Context* of High-Quality PL for SETs

PL's high-quality *context* features opportunities for participants to engage in *learning communities*, which requires effective collaboration, communication, and relationship skills (Learning Forward, 2011). Such interpersonal communication skills are fundamental to school psychology practice and training (NASP, 2010a; Ysseldyke et al., 2006), and provide a clear area that school psychologists can contribute to high quality PL. In particular, the *Practice Model* (NASP, 2010a) emphasizes that school psychologists use their ability to facilitate communication and problem solving among diverse school personnel and community professions to promote change at a variety of levels (e.g., individual student, classroom, building, and district level; Fagan & Wise, 2007; NASP, 2010a; 2010b). Further, NASP's *Standards for the Credentialing of School Psychologists* (2010b) emphasizes training in consultation as part of the core curricula. Thus, facilitating learning communities via high quality PL is one obvious way to meet the *Practice Model* mandate and use core school psychology skills.

Consultation (NASP, 2010b; Anton-LaHart & Rosenfield, 2004; Hazel, Lavioletter, & Lineman, 2010) and related interpersonal skills, such as problem-solving, interviewing, active listening, reframing, modeling, relationship development, and group dynamics (Henning-Stout, 1999; Tharinger, Pryzwansky, & Miller, 2008) are foundational skills for school psychologists and necessary components of PL *learning communities* (Burns, 2013). By facilitating the socially-mediated learning and peer support in PL *learning communities* (Learning Forward, 2011), school psychologists can use their professional training and skills to foster cooperative relationships between the PL participants (e.g., SETs; McKenzie, 2009; Mostert, 2011). Further, in such *learning communities*, school psychologists can use consultation skills to support SETs' successful participation in cycles of continuous improvement through problem-solving. For instance, school psychologist could use their collaborative problem-solving skills to help SET

groups identify existing problems, assess the data, intervene using evidence-based interventions, and then evaluate the outcomes of their efforts (Newell, Newell, & Looser, 2013). Developing system capacity to provide ongoing coaching and mentoring of SETs' implementation of the content to ensure fidelity, integrity, and sustainability of PL initiatives are key elements of this process that should be well within the skillsets of contemporary school psychologists (Burns, 2013; Forman, Qlin, Hoagwood, Crowe, & Saka, 2009).

High-quality PL *contexts* are also facilitated by educational *leadership* that values effective PL as a key support for SETs' growth leading to improved SWD outcomes (Learning Forward, 2011). School psychologists' systems-level expertise (NASP, 2010a), experience working with administration, and unique role in the system can be leveraged to enhance school and district leaders' commitment to providing high-quality PL for SETs. School leaders need trusted sources of evidence-based information and guidance. School psychologists have long been encouraged to become active purveyors of such information (e.g., Fagan, 2000; Fagan & Wise, 2007; Shinn, 2002; 2007) and to use their unique blend of educational and psychological training as a system-wide information resource. School psychologists can blend their knowledge of the schools' structure, organization, and personnel with information about evidence-based preventative and responsive services to help design and implement high quality PL tailored to the specific needs of SETs in the school system. Specifically, school psychologists can use their skills to understand SETs' needs in relation to systemic imperatives and help communicate those needs to school administrators (NASP 2010a, Shapiro, 2000). As key stakeholders with unique knowledge and standing, school psychologists have the potential to advocate for continuous learning for SETs that leads to academic and social-emotional success of SWDs, and increased partnerships among all educators involved in SWDs' lives (Conoley, 2012). For example, school

psychologists can use their "understanding of human behavior from a social systems perspective, ability to use collaborative planning and problem-solving procedures, [and] a familiarity with principles for organizational change" (Castillo & Curtis, 2014; p. 12) to work with leadership to advocate for activities and resources associated with building the capacity of SETs in the schools. By collaborating with administrators and teachers, school psychologists can help the system identify needs and resources that can be used to support SETs' PL and SWDs' achievement (Center for Mental Health in Schools at UCLA, 2015; NASP, 2015b).

School Psychologists Supporting the *Process* of High-Quality PL for SETs

The *process* of providing high-quality PL for SETs requires analysis of specific and authentic *data* that informs planning, selection of appropriate *learning designs*, and *implementation* of the PL content (Learning Forward, 2011). School psychology training in research methods, statistics, psychological assessment, and program evaluation provides schools with a unique perspective and skillset for using *data* (Tharinger et al, 2008; Ysseldyke et al., 2006) to identify and address needs. Such skills are central to support PL efforts (Learning Forward). As trained problem-solvers , the NASP *Practice Model*(2010a) envisions school psychologists using a variety of assessment methods to understand problems, identify strengths and needs, develop interventions or programs, and assess outcomes at both the student and system levels (Armistead & Smallwood, 2014).

School psychologists can apply their training to help gather data about schools, programs, and classrooms (Ysseldyke et al., 2006) to support the selection of appropriate PL *learning designs* that meet SETs' specific needs. Once PL is implemented, school psychologists can use their analytical skills to monitor and evaluate the formative *data* about the PL (NASP, 2010a; Roach, Lawton, & Elliott, 2014) to ensure it is continuously adjusted to meet the needs of SETs

and their SWDs. Similarly, in support of summative *data* evaluation, school psychologists can use the same skills to assess the PL's effectiveness and results (Learning Forward, 2011, NASP)

Once PL is delivered, school psychologists can assist SETs' as they *implement* data-based problem solving content, which is related directly to SWD outcomes (Stormont, Thomas, & Van Garden, 2012; Vo & Sutherland, 2012; Tilly, 2008). School psychologists can help empower SETs to differentiate instruction based on the data by providing feedback and support on how to administer and interpret progress monitoring measures (Jones et al., 2012; Kilgus, Collier-Meek, Johnson, & Jaffery, 2014). Knowledge of evaluation tools can support SETs' application of PL content and use of data to empirically evaluate, develop, apply, and alter learned remedial strategies and interventions (Skinner, McCleary, Skolits, Poncy, & Cates, 2013).

School Psychologists Supporting the *Content* of High-Quality PL for SETs

Evidence-based PL includes essential *content* that addresses both student and educator needs and assesses outcomes using current research and knowledge as guides. Thus, effective PL is informed by both research about the content and research about practical educational applications of that content. Although school psychologists are not experts in classroom pedagogy, they have training and knowledge of academic and mental health interventions (NASP, 2010a; Splet, Fowler, Weist, & McDaniel, 2013) that can inform appropriate and high-quality PL *content* for SETs. School psychology training typically includes areas such as human development, curriculum and instruction, prevention and intervention, and exceptional education (Fagan & Wise, 2007). School psychologists should have knowledge of biological, cultural, developmental, and social influences on academic skills and mental health as well as evidence-based curricular and pedagogical strategies to promote instruction and social-emotional

functioning (NASP, 2010a; p.5; NASP, 2010b, p. 6). Additionally, the school psychology community has been instrumental in promoting evidence-based practices in schools (Kratochwill et al., 2012), with the formation of the American Psychological Association Division 16 task force on evidence-based interventions and related publications (Kratochwill & Stoiber, 2000; Ysseldyke & Reschly, 2014). School psychologists' core knowledge about students and learning could help make sound decisions about essential *content* to match both SET and SWD areas of need. Knowledge of evidence-based practices can help ensure PL for SETs can provide needed high-quality interventions to address SWDs' scope of challenges as well as support SETs in applying them to their classrooms and with SWDs.

School psychologists' understanding of culturally competent practice (Ortiz, Flanagan, & Dynda, 2008) varies considerably, although it is increasingly acknowledged as a critical factor in successful practice (NASP, 2010a; Ortiz et al.). Culturally competent school psychologists could help to create and implement PL *content* that is culturally responsive to both SETs and SWDs. The field has adopted sound multicultural competencies and standards for training (e.g., APA, 2002; NASP, 2010a, 2010b; Lopez & Bursztyn 2013; Newell, Nastasi, Hatzichristou, Jones, Schanding Jr., & Yetter, 2010), with a recent national survey revealing most (78%) doctoral and nondoctoral programs included some form of multicultural training (Newell & Brumm-Larson, 2010). According to NASP's *Practice Model* (2010a) and *Standards for Graduate Preparation* (2010b),

> "school psychologists have knowledge of individual differences, abilities, disabilities, and other diverse characteristics; principles and research related to diversity factors for children, families, and schools, including factors related to culture, context, and

> individual and role differences; and evidence-based strategies to enhance services and address potential influences related to diversity" (p. 7).

Being well-versed in the various cultures of the students and school personnel with whom school psychologists work with is a foundational step to successfully executing appropriate PL for SETs (Burns, 2013). School psychologists' expertise in working with SWDs as well as those who face barriers due to language, family, and/or socioeconomic situations (NASP, 2015a) can help ensure culturally appropriate PL *content*. Given SETs' unique position and students they serve (i.e., versus general education teachers), school psychology practitioners can help identify and address these differences, strengths, and backgrounds to ensure PL is created and adapted to meet these distinct needs.

Challenges and Solutions to School Psychologists Facilitating PL

Potential Challenges

PL could provide school psychologists an extraordinary opportunity to expand their role and help build essential capacity for SETs, but there are several potential challenges to overcome. Other educators' perception of the school psychology role is a particular challenge to overcome. Numerous studies report that teachers and administrators perceive the primary role of school psychologists to be special education classification and programming activities (e.g., Abel & Burke, 1985; Gilman & Gabriel, 2004; Gilman & Medway, 2007; Watkins, Crosby, Pearson, 2001). Administrators value the assessment role (Mägi & Kikas, 2009) and SETs' most often interact with school psychologists regarding psychoeducational evaluations. Consequently, other educators' perceptions of school psychology are limited to them being special education "sorters" or "testers" (Fagan & Wise, 2007) and little else (Conoley & Gutkin, 1995). As such, schools often deploy school psychologists with a singular role (i.e., assessment) in mind and,

consequently, these practitioners are prevented from expanding their roles by being assigned to serve high numbers of schools and students (Fagan & Wise; Filter et al., 2013). The predictable result is that most of their time is dedicated to assessment-related activities for special education eligibility and little is available for system-level consultation (Curtis, March, Castillo, & Gelley, 2012; Filter et al.; Stoiber & Vanderwood, 2008).

Many school psychologists do not feel they have the competencies necessary to practice all 10 NASP domains (Stoiber & Vanderwood, 2008; e.g., mental health services, Suldo et al., 2010; general systems-level services, Rossen & Charvat, 2011), which are needed to support various aspects of SET PL. There is a wide range of training requirements due to the various accrediting agencies (e.g., NASP, APA, etc.; Vanderwood et al., 2015) and different guidelines per each state. In regards to PL, one study revealed that the majority of school psychologists surveyed reported no formal training in PL delivery (Bolling, 2014). Further, Riley-Tillman, Kalberer, and Chafouleas (2005) claimed there is a gap between school psychology researchers and practitioners, which limits the transfer of new research and knowledge to practice.

Overcoming the Challenges

Addressing these challenges is critical for school psychologists to move beyond the assessment role, establish systems-level practice, and, among other things, facilitate SETs' PL programs. To begin, school psychologists can conduct ongoing self-assessment to identify areas of growth that correspond to the Learning Forward (2011) standards. Due to variability in content and/or pedagogical knowledge and initial training, practitioners should seek out their own PL to expand their tool box to support PL for SETs, such as how to better work with and educate adults. The *Practice Model* (NASP, 2010a) provides guidance for continuing PL and the NASP *Self-Assessment for School Psychologists* (NASP, 2016) can help school psychologists

identify specific PL needs and topics for training. As needs are identified, practitioners can take advantage of professional resources, including organizations in the field (e.g., NASP and APA) and in related fields (e.g., Learning Forward, American Educational Research Association, Council for Exceptional Education, etc.) and their respective websites, conferences, and publications (Splett, et al., 2013). Additionally, school psychologist can set up regular peer consultation or professional learning community meetings with colleagues to discuss professional issues, student needs, progress, and strategies for promoting positive student outcomes (NASP, 2015b). Once their own professional development process is underway, school psychologists could begin to advocate for opportunities to use their skills and services to benefit the wider school community, including assisting with PL for SETs.

Such advocacy could include educating administrators and SETs on the range of roles and functions school psychologists can provide. NASP's (2010a) *Practice Model* and advocacy tools and resources (i.e., website) can provide a framework for school psychologists to identify how their knowledge and skills address the unique needs of SETs and SWDs and how to communicate that information to others. School psychologists can also promote broader roles and become more visible by attending meetings outside of the required ones focused on special education evaluation (e.g., Arivett, Rust, Brissie, & Dansby, 2007). School psychologists can build and expand their relationships with SETs; for example, through collaborations outside of the assessment process, they can understand SETs' current needs and, subsequently, help address concerns through PL (e.g., Anderson, Klassen, and Georgiou, 2007).

Conclusion

SETs struggle to meet the needs of SWDs, who continue to perform lower than expected in school and beyond. Research recommends high-quality PL as a way to increase teacher

capacity and, consequently, student outcomes. At the same time, the school psychology professional organizations advocate for a broad-based service delivery role to better address the needs of all students and teachers. Supporting PL for SETs is one way school psychologists can move closer to this proposed comprehensive service model. According to the NASP *Practice Model* (2010a), school psychologists have the knowledge and skills to conduct and facilitate aspects of high-quality PL as outlined by Learning Forward's *Standards of PL* (2011). As such, this paper proposes utilizing school psychologists to support implementation of evidence-based PL to increase SETs' capacity to teach and, consequently, SWDs' outcomes.

PL for SETs is a way for practitioners to indirectly reach more SWDs. Instead of working with a singular SET to address one or even a classroom of students, school psychologists can support PL that works with many SETs who each teach a class full of SWDs. Further, expanding roles outside of assessment may help to account for higher level of job satisfaction expressed by practitioners (Unruh & McKellar, 2013). PL provides opportunities to assume roles in consulting, counseling, interventions, and systems change, which psychologists have reported to prefer (Curtis, Lopez, Castillo, Batsche, Minch, & Smith, 2008; Hosp & Reschly, 2002; Nelson & Machek, 2007). Similarly, by providing SETs' PL, SETs may become more effective in working with SWDs and, in turn, happier themselves in their position and less likely to leave the field.

The *Practice Model* (NASP, 2010a) provides a blueprint for school psychologist to support PL for SETs. Many skills and practices of school psychologists as identified in the *Practice Model* (NASP), such as collaboration and consultation and data-based decision making, can support the implementation of high-quality PL for SETs, including facilitating learning communities and monitoring and evaluating the PL chosen. Due to misguided role perceptions,

time constraints, and insufficient training, aligning the *Practice Model* (NASP) to the *Standards for PL* (Learning Forward, 2011) may take patience, persistence, and time. However, school psychologists possess the skills, desire, and audience to expand their services and support evidence-based PL efforts for SETs, which can positively impact many SWDs.

References

Abel, R. R., & Burke, J. P. (1985). Perceptions of school psychology services from a staff perspective. *Journal of School Psychology, 23,* 121-131.

American Psychological Association (APA). (2002). *Guidelines on multicultural education, training, research, practice, and organizational change for psychologists.* Retrieved from http://www.apa.org/pi/oema/resources/policy/multicultural-guideline.pdf

Anderson, C., Klassen, R., & Georgiou, G. (2007). What teachers say they need and what school psychologists can offer. *School Psychology International, 28,* 131-147

Anton-LaHart, J., & Rosenfield, S. (2004). A survey of preservice consultation training in school psychology programs. *Journal of Educational and Psychological Consultation, 15,* 41–62

Arivett, D.L, Rust, R.O., Brissie, J.S., & Dansby, V.S. (2007). Special education teachers' perceptions of school psychologists in the context of individualized education program meetings. *Education, 127,* 378-388.

Armistead, R. J. & Smallwood, D. L. (2014). The National Association of School Psychologists Model for Comprehensive and Integrated School Psychological Services. In P. Harrison & A. Thomas (Eds), *Best Practices in School Psychology V* (5th Ed.). Bethesda, MD: National Association of School Psychologist.

Aud, S., Hussar, W., Kena, G., Bianco, K., Frohlich, L., Kemp, J., & Tahan, K. (2011). *The Condition of Education 2011* (NCES 2011-033). U.S. Department of Education, National Center for Education Statistics. Retrieved from http://nces.ed.gov/nationsreportcard/pdf/main2011/2012457.pdf

Berry, B., Turchi, L., & Johnson, D. (2003). The impact of high-stakes accountability on teachers' professional development: Evidence from the south. Retrieved from http://files.eric.ed.gov/fulltext/ED499079.pdf

Billingsley, B. (2002). Improving special education teacher retention: Implications from a decade of research. *The Journal of Special Education Leadership, 15*, 20–26.

Billingsley, B. (2011). Factors influencing special education teacher quality and effectiveness. In J. M. Kauffman & D. P. Hallahan (Eds.), *Handbook of special education*, (pp. 391-405). New York, NY: Taylor & Francis.

Billingsley, B. S. (2004). Special education teacher retention and attrition: A critical analysis of the research literature. *The Journal of Special Education, 38,* 39-55.

Blank, R. K., de las Alas, N., & Smith, C. (2008). *Does teacher professional development have effects on teaching and learning* (Grant # REC 0438359)? Retrieved from Council of Chief State School Officers from the National Science Foundation website: http://www.ccsso.org/projects/improving_evaluation_of_professional_development

Boe, E. E., Cook, L. H., & Sunderland, R. J. (2007). *The prevalence of various aspects of teacher preparation, induction, mentoring, extra support, professional development, and workload factors for beginning teachers in special and general education.* (No. 2007-DAR1). Retrieved from University of Pennsylvania, Center for Research and Evaluation in Social Policy website: http://www.gse.upenn.edu/cresp/

Bolling, M. (2014). *From traditional to reform: Exploring the involvement of school psychologists in the provision of educator professional learning* (Doctoral dissertation). Retrieved from ScholarWorks @ Georgia State University, http://scholarworks.gsu.edu/cps_diss/94

Borko, H. (2004). Professional development and teacher learning: *Mapping the terrain. Educational Researcher, 22*(8), 3-15.

Branstad, T., Acosta, A., Bartlett, S., Berdine, W., Butterfield, P., Chambers, J., . . . Wright, K. (2002). *A new era: Revitalizing special education for children and their families.* Washington, DC: Department of Education.

Bradley-Johnson, S., & Dean, V. J. (2000). Role change for school psychology: The challenge continues in the new millennium. *Psychology in the Schools, 37,* 1-5.

Brown, M.B. (2008). Best practices in designing and delivering training programs. In A. Thomas & J. Grimes (Eds.), *Best Practices in School Psychology V* (pp. 2029-2040). Bethesda, MD: Author.

Brownell, M. T., Adams, A., Sindelar, P., Waldron, N., & Vanhover, S. (2006). Learning from collaboration: The role of teacher qualities. *Exceptional Children, 72,* 169-185.

Brownell, M. T., Billingsley, B. S., McLeskey, J., & Sindelar, P. T. (2012). Teacher quality and effectiveness in an era of accountability: Challenges and solutions in special education. In J. B. Crockett, B. S. Billingsley, & M. L. Boscardin (Eds.), *Handbook of leadership and administration for special education* (pp. 260-280). New York, NY: Taylor & Francis.

Brownell, M. T., Leko, M. M., Kamman, M., & King, L. (2008). Defining and preparing high-quality teachers in special education: What do we know from the research? *Advances in Learning and Behavioral Disabilities, 21,* (35-74). d oi:IO.IOI6/S0735-004X(08)00001-5

Burns, M. K. (2013). Contextualizing school psychology practice: Introducing featured research commentaries. *School Psychology Review, 42,* 334-342.

Burns, M. K., & Ysseldyke, J. E. (2009). Reported prevalence of evidence-based instructional practices in special education. *The Journal of Special Education, 43,* 3-11. doi: 10.1177/0022466908315563

Cassada. K. M., Stevens, C. J., & Wilson, J. S. (2005). School improvement-aligned! *Turnaround Schools*, *62*. Retrieved from http://www.ascd.org/publications/educational-leadership/summer05/vol62/num09/School-Improvement%E2%80%94Aligned!.aspx

Castillo, J. M., & Curtis, M. J. (2014). Best practices in systems-level change. In P. Harrison & A. Thomas (Eds), *Best Practices in School Psychology V* (5th Ed.). Bethesda, MD: National Association of School Psychologist.

Castillo, J., Curtis, M., & Gelley, C. (2012) School psychology 2010: Demographics, employment, and the context for professional practice – Part 1.*NASP Communique, 40*(8), 28-30.

Center for Mental Health in the Schools at UCLA. (2015). *Resource mapping and management to address barriers to learning: An intervention for systemic change.* Retrieved from http://smhp.psych.ucla.edu/pdfdocs/resourcemapping/resourcemappingandmanagement.pdf

Conoley, J. C. (2012, October). *The process and content of leadership for school-based psychology.* Featured speaker at the Conference on the Future of Psychology, online.

Conoley, J. C., & Conoley, C. W. (1992). *School consultation: Practice and training* (2nd ed.). Boston: Allyn and Bacon.

Conoley, J. C., & Gutkin, T. B. (1995). Why didn't-Why doesn't-School psychology realise its promise? *Journal of School Psychology*, *33*, 209-217.

Cook, B. G., & Odom, S. L. (2013). Evidence-based practices and implementation science in special education. *Exceptional Children, 79,* 135-144.

Cook, B. G., & Schirmer, B. R. (2006).An overview and analysis of the role of evidence-based practices in special education. In B. G. Cook & B. R. Schirmer (Eds.), *What is special*

about special education? Examining the role of evidence-based practices. Austin, TX: PRO-ED, Inc.

Correa, V. I., & Wagner, J. Y. (2011). Principals' roles in supporting the induction of special education teachers. *Special Education Leadership, 24*(1), 17-25.

Cortiella, C. (2007). *Rewards and roadblocks: How special education students are faring under No Child Left Behind*. New York: National Center for Learning Disabilities.

Curtis, M. J., Lopez, A. D., Castillo, J. M., Batsche, G. M., Minch, D., & Smith, J. C. (2008). The status of school psychology: Demographic characteristics, employment conditions, professional practices, and continuing professional development. *Communiqué, 36,* 27-29.

Curtis, M., March, A., Castillo, J., & Gelley, D. (2012, May). School psychology 2010: Demographics, employment, and the context for professional practices – part 1. *NASP Communiqué, 40*(1), 28-30.

Desimone, L. M. (2009). Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. *Educational Researcher, 38,* 181–199. doi:10.3102/0013189X08331140

Desimone, L. M., Porter, A. C., Garet, M. S., Yoon, K. S., & Birman, B. F. (2002). Effects of professional development on teachers' instruction: Results from a three-year longitudinal study. *Educational Evaluation and Policy Analysis, 24,* 81-112.

Dingle, M. P., Brownell, M. T., Leko, M. M., Boardman, A. G., & Haager, D. (2011). Developing effective special education reading teachers: The influence of professional development, context, and individual qualities. *Learning Disability Quarterly, 34*, 87-103.

Ehrhardt-Padgett, G. N., Hatzichristou, C., Kitson, J., & Meyers, J. (2004). Awakening to a new dawn: Perspectives of the future of school psychology. *School Psychology Review, 33,* 105–114.

Every Student Succeeds Act of 2015, Pub. L. No. 114-95 No: 114-95 § 114, S. 1177 (2015).

Fagan, T. & Wise, P.S. (2007). *School Psychology: Past, Present, and Future- 3rd Edition*. White Plains, NY: Longman Publishing Group.

Fagan, T. (2000). Practicing school psychology: A turn-of-the-century perspective. *American Psychologist, 55,* 754-757.

Filter, K. J., Ebsen, S., & Dibos, R. A. (2013). School psychology crossroads: Discrepancies between actual and preferred discrete practices and barriers to preferred practice. *International Journal of Special Education*, *28,* 88-100.

Forman S. G., Olin, S. S., Hoagwood, K. E., Crowe, M., & Saka, N. (2009). Evidence-based interventions in schools: Developers' views on implementation barriers and facilitators. *School Mental Health, 1,* 26–36. doi: 10.1007/s12310-008-9002-5.

Gallessich, J. (1982). *The profession and practice of consultation: A handbook for consultants, trainers of consultants, and consumers of consultation services.* San Francisco: Jossey Bass.

Garet, M. S., Porter, A. C., Desimone, L, Birman, B. F., & Yoon, K. S. (2001). What makes professional development effective? Results from a national sample of teachers. American Education Research Journal, 38, 915-945. doi: 10.3102/00028312038004915

Gilman, R., & Gabriel, S. (2004). Perceptions of school psychological services by education professionals: Results from a multi-state survey pilot study. *School Psychology Review, 33,* 271-286.

Gilman, R., & Medway, F. J. (2007). Teachers' perceptions of school psychology: A comparison of regular and special education teacher ratings. *School Psychology Quarterly*, 22, 145-161. doi: 10.1037/1045-3830.22.2.145

Guskey, T. R. (2003). Analyzing lists of the characteristics of effective professional development to promote visionary leadership. *NASSP Bulletin, 87,* 4-20.

Gutkin, T. B., & Conoley, J. C. (1990). Reconceptualizing school psychology from a service delivery perspective: Implications for practice, training, and research. *Journal of School Psychology, 28,* 203-223.

Hazel, C. E., Laviolette, G. T., & Lineman, J. M. (2010). Training professional psychologists in school-based consultation: What the syllabi suggest. *Training and Education in Professional Psychology, 4,* 235–243. doi:10.1037/a0020072

Henning-Stout, M. (1999). Learning consultation: An ethnographic analysis. *Journal of School Psychology, 37,* 73-98.

Hochberg, E. D., & Desimone, L. D. (2010). Professional development in the accountability context: Building capacity to achieve standards. *Educational Psychologist, 45*, 89-106. doi: 10.1080/00461521003703052

Horner, R. (2012, October). *Leadership by school psychologist*. Keynote speaker at the Conferenc eon the Future of Psychology, online.

Hosp, J. L. & Reschly, D. J. (2002). Regional difference in school psychology practice. *School Psychology Review, 31,* 11-29.

Individuals with Disabilities Education Improvement Act of 2004, 20 U.S.C. § 1400 et seq. (2004)

Ingersoll, R. M., & Smith, T. M. (2003). The wrong solution to the teacher shortage. *Educational Leadership, 60*(8), 30-33.

Jennings, P. A., & Greenberg, M. T. (2009). The prosocial classroom: Teacher social and emotional competence in relation *to student and classroom outcomes. Review of Educational Research, 79,* 491–525.

Jones, M. L., (2009). A study of novice special educators' views of evidence-based practices. *Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council of Exceptional Children, 32*, 101-120. doi: 10.1177/0888406409333777

Jones, R. E., Yssel, N., & Grant, C. (2012). Reading instruction in tier 1: Bridging the gaps by nesting evidence-based interventions within differentiated instruction. *Psychology in the Schools, 49,* 210-218. doi: 10.1002/pits.21591

Kavale, K. A. (2005). Identifying specific learning disability: Is responsiveness to intervention the answer? *Journal of Learning Disabilities, 38,* 553-562.

Kilgus, S. P., Collier-Meek, M. A., Johnson, A. H., & Jaffery, R. (2014). Applied empiricism: Ensuring the validity of causal response to intervention decisions. *Contemporary School Psychology, 18,* 1-12. doi: 10.1007/s40688-013-0009-z

Klinger, J. K., Boardman, A. G., & McMaster, K. L. (2013). What does it take to scale up and sustain evidence-based practices? *Exceptional Children, 79,* 195-211.

Klingner, J. K. (2004). The science of professional development. *Journal of Learning Disabilities, 37,* 248-255.

Kratochwill, T. R., Hitchcock, J. H., Horner, R. H., Levin, J. R., Odom, S. K., Rindskopf, D. M., & Shadish, W. R. (2012). Single-case intervention research design standards. *Remedial and Special Education, 34,* 26-38. doi: 10.1177/0741932512452794

Kratochwill, T., & Stroiber, K. (2000). Empirically supported interventions and school psychology: Conceptual and practical issues, Part II. *School Psychology Quarterly, 38,* 349-358.

Landrum, T. J., Cook, B. G., Tankersley, M., & Fitzgerald, S. (2002). Teacher perceptions of the trustworthiness, usability, and accessibility of information from different sources. *Remedial and Special Education, 23,* 42–48.

Lang, M., & Fox, L. (2003). Breaking with tradition: Providing effective professional development for instructional personnel supporting students with severe disabilities. *Teacher Education and Special Education, 26,* 17-26. doi: 10.1177/088840640302600103

Lay, M. (2012, October). *Building capacity to promote student success through consultation and collaboration.* Panel presenter at the Conference on the Future of Psychology, online.

Learning Forward. (2011). *Standards for professional learning.* Oxford, OH: Author.

Leko, M. M., & Brownell, M. T. (2009). Crafting quality professional development for special educators: What school leaders should know. *Teaching Exceptional Children, 42,* 64-70.

Lieberman, A. & Miller, L. (Eds.) (2008). *Teachers in professional communities: Improving teaching and learning.* New York: Teachers College Press.

Lopez, E. C., & Bursztyn, A. M. (2013). Future challenges and opportunities: Toward culturally responsive training in school psychology. *Psychology in the Schools, 50,* 212-228. doi: 10.1002/pits.21674

Mägi, k., & Kikas, E. (2009). School psychologists' role in school: Expectations of school principals on the work of school psychologists. *School Psychology International, 30,* 331-346. doi: 10.1177/0143034309106943

McDaniel, L. J., & Ahr, A. E. (1965). The school psychologist as a resource person initiating and conducting in-service teacher education. *Psychology in the Schools, 2,* 220-224.

McKenzie, R. G. (2009). A national survey of pre-service preparation for collaboration. *Teacher Education and Special Education, 32,* 379-393. doi: 10.1177/0888406409346241

McLeskey, J. (2011). Supporting improved practice for special education teachers: The importance of learner-centered professional development. *Journal of Special Education Leadership, 24*(1), 26-35.

McLeskey, J., & Billingsley, B. S. (2008). How does the quality and stability of the teaching force influence the research-to-practice gap? A perspective on the teacher shortage in special education. *Remedial and Special Education, 29,* 293-305. doi: 10.1177/0741932507312010

Merrell, K. W., Ervin, R. A., Peacock, G. G. (2006). *School psychology for the 21st century: Foundations and practices*. New York: Guilford Press.

Merriam, S., Caffarella, R. & Baumgartner, L. (2007). *Learning in adulthood: A comprehensive guide*. San Francisco: Jossey-Bass.

Meyers, J., Roach, A. T., & Meyers, B. (2009). Engaging in the debate: A critique of Blueprint III. *Journal of Educational and Psychological Consultation, 19,* 197-223.

Morgan, P. L., Firsco, M., Farkas, G., & Hibel, J. (2010). A propensity score matching and analysis of the effects of special education. *Journal of Special Education, 43,* 236-254.

Mostert, M. P. (2011). A journey from awareness and advocacy to action: Special education in the United States. In M. A. Winzer & K. Mazurek (Eds.), *International practices in special education: Debates and challenges*. Washington: Gallaudet University Press

Murray, J. (2014). *Designing and implementing effective professional learning*. Thousand Oaks, CA: SAGE Publications Ltd.

National Association of School Psychologists (NASP). (2010a). *Model for comprehensive and integrated school psychological service delivery*. Bethesda, MD: Author.

National Association of School Psychologists (NASP). (2010b). *Standards for graduate preparation of school psychologists.* Bethesda, MD: Author.

National Association of School Psychologists (NASP). (2015a). *NASP Advocacy Roadmap: NASP Practice Model. Model for Comprehensive and Integrated School Psychological Services. Exhibit E: Key Messages about the NASP Practice Model.* Retrieved from: www.nasponline.org

National Association of School Psychologists (NASP). (2015b). School *psychologists: Improving student and school outcomes.* Retrieved from www.nasponline.org.

National Association of School Psychologists (NASP). (2016, November 27). *Self-assessment for school psychologists*. Retrieved from http://apps.nasponline.org/standards-and-certification/survey/survey_launch.aspx

National Center for Learning Disabilities. (2010, September). *Teacher effectiveness and professional development* (policy brief). Retrieved from http://www.ncld.org

Nelson, J. M., & Machek, G. R. (2007). A survey of training, practice, and competence in reading assessment and intervention. *School Psychology Review, 36*, 311-327.

Newell, M. L. & Brumm-Larson, J. (2010, February). *Multicultural training in school psychology*: *An analysis of curriculum content and training models*. Presented at the meeting of the National Association of School Psychologists, Chicago, IL.

Newell, M. L., Nastasi, B. K., Hatzichristou, C., Jones, J. M., Schanding, G. T., Jr., & Yetter, G. (2010). Evidence on multicultural training in school psychology: Recommendations for future directions. *School Psychology Quarterly, 24,* 249-278. doi: 10.1037/a0021542

Newell, M. L., Newell, T. S., & Looser, J. A. (2013). Examining how novice consultants address cultural factors during consultation: Illustration of a computer-simulated method. *Consulting Psychology Journal: Practice and Research, 65*, 74-86.

Newman, D. S., Barrett, C. A., & Hazel, C. E. (2015). School consultation practices in the early career: Does training matter? *Consulting Psychology Journal: Practice and Research, 67*, 326-347. Doi: 10.1037/cpb0000048

Newman, L., Wagner, M., Knokey, A.-M., Marder, C., Nagle, K., Shaver, D., Wei, X., Cameto, R., Contreras, E., Ferguson, K., Greene, S., & Schwarting, M. (2011). *The post-high school outcomes of young adults with disabilities up to 8 years after high school. A report from the National Longitudinal Transition Study-2 (NLTS2)* (NCSER 2011-3005). Retrieved from National Center for Special Education Research website: http://ies.ed.gov/ncser/pubs/20113005/pdf/20113005.pdf

No Child Left Behind (NCLB) Act of 2001, Pub. L. No. 107-110, § 115, Stat. 1425 (2002).

Thurlow, M. L., Quenemoen, R. F., & Lazarus, S. S. (2011). *Meeting the needs of special education students: Recommendations for the Race to the Top consortia and states.* Washington, DC: Arabella Advisors.

Odden, A. (2011). Resources: The dollars and sense of comprehensive professional learning. *Journal of Staff Development, 32* (4), 26-32.

Odom, S. L. (2009). The tie that binds: Evidence-based practice, implementation science, and outcomes for children. *Topics in Early Childhood Special Education, 29,* 53-61. doi: 10.1177/0271121408329171

Odom, S. L., Cox, A. W., & Brock, M. E. (2013). Implementation science, professional development, and autism spectrum disorders. *Exceptional Chilren,* 79, 233-251.

Penuel, W. R., Fishman, B. J., Yamaguchi, R., & Gallagher, L. P. (2007). What makes professional development effective? Strategies that foster curriculum implementation. *American Educational Research Journal, 44,* 921-958.

Reschly, D. J., & Wilson, M. S. (1995). School psychology practitioners and faculty: 1986 to 1991-1992 trends in demographics, roles, satisfaction, and system reform. *School Psychology Review, 24,* 62-80.

Reschly, D. J., & Ysseldyke, J. E. (2002). Paradigm shift: The past is not the future. In A. Thomas & J. Grimes (Eds.) *Best practices in school psychology IV* (4th Ed.) (pp. 3-20). Bethesda, MD: National Association of School Psychologists.

Riley-Tillman, T. C., Kalberer, S. M., & Chafouleas, S. M. (2005). Selecting the right tool for the job: A review of behavior monitoring tools used to assess student response to interventions. *The California School Psychologist, 10,* 81-91.

Roach, A.T., Lawton, K., & Elliott, S.N. (2014). Best practices in facilitating and evaluating the integrity of school-based interventions. In A. Thomas & P. Harrison (Eds.) *Best Practices in School Psychology V.* (5^{th} Ed.) (pp. 133-146). Bethesda, MD: National Association of School Psychologists.

Rosenfield, S., Levinsohn-Klyap, M., & Cramer, K. (2010) Educating consultants for practice in the schools. In E. Garcia-Vasquez, T. Crespi, & C. Riccio (Eds.). *Handbook of education, training and supervision of school psychologists in school and community volume 1: Foundations of professional practice* (pp. 259-278). New York: Routledge.

Rossen, E. & Chavat, J. (2011, December). Preliminary results from the NASP self-assessment tool. *Communiqué, 40* (4). Retrieved from NASP website: http://www.nasponline.org/publications/cq/40/4/preliminary-results.aspx

Ruble, L. A., & McGrew, J. H. (2013). Teacher and child predictors of achieving IEP goals of children with autism. *Journal of Autism and Developmental Disorders, 43*, 2748–2763

Saunders, W. M., Goldenberg, C. N., & Gallimore, R. (2009). Increasing achievement by focusing grade-level teams on improving classroom learning: A prospective, quasi-experimental study of Title I schools. *American Educational Research Journal, 46,* 1006-1003.

Sgouros, I., & Walsh, K. (203). Implementing RTI: Response to Intervention within tier 3: A model for data teams. *NASP Communique, 40* (8). Retrieved from http://www.nasponline.org/publications/cq/40/8/response-to-intervention.aspx

Shapiro, E. S. (2000). School psychology from an instructional perspective: Solving big, not little problems. *School Psychology Review, 29*, 560-572.

Shinn, M. R. (2002). Best practices in using curriculum-based measurement in a problem-solving model. In A.Thomas & J. Grimes (Eds.), *Best practices in school psychology IV* (Vol. 1, Vol. 2) (pp. 671-697). Washington, DC, US: National Association of School Psychologists.

Shinn, M. R. (2007). Identifying students at risk, monitoring performance, and determining eligibility within Response to Intervention: Research on educational need and benefit from academic intervention. *School Psychology Review, 36*, pp. 604-617.

Sidelar, P. T., Brownell, M. T., & Billingsley, B. (2010). Special education teacher education research: Current status and future direction. *Teacher Education and Special Education, 33*, 8-24. doi: 10.117/0888406409358593

Skinner, C. H., McCleary, D. F., Skolits, G. L., Poncy, B. C., & Cates, G. L. (2013). Emerging opportunities for school psychologists to enhance out remediation procedure evidence base as we apply response to intervention. *Psychology in the Schools, 50*, 272-289. doi: 10.1002/pits.21676

Smith, C., Hofer, J., Gillespie, M., Solomon, M., & Rowe, K. (2003). *How teachers change: A study of professional development in adult education.* Retrieved from NCSALL website: http://www.ncsall.net/fileadmin/resources/research/report25.pdf

Smith, G. J., Richards-Tutor, C., & Cook, B. G. (2010). Using teacher narratives in the dissemination of research-based practices. Intervention in School and Clinic, 46, 67-70. doi: 10.1177/1053451210375301

Splett, J. W., Fowler, J., Weist, M. D., & McDaniel, H. (2013). The critical role of school psychology in the school mental health movement. *Psychology in the Schools, 50*, 245-258. doi: 10.1002/pits.21677

Stoiber, K. C., & Vanderwood, M. L. (2008). Traditional assessment, consultation, and intervention practices: Urban school psychologists' use, importance, and competence ratings. *Journal of Educational & Psychological Consultation, 18*, 264-292. doi: 10.1080/10474410802269164

Suldo, S. M., Friedrich, A., & Michalowski, J. (2010). Personal and systems-level factors that limit and facilitate school psychologists' involvement in school-based mental health services. *Psychology in the Schools, 47,* 354-373. doi: 10.1002/pits.20475

Supovitz, J. A., & Klein, V. (2003). *Mapping a course for improved student learning: How innovative schools systematically use student performance data to guide improvement*. Retrieved from the Consortium for Policy Research in Education website: http://www.cpre.org/sites/default/files/researchreport/816_ac-08.pdf\

Tharinger, D. J., Pryzwansky, W. B., & Miller, J. A. (2008). School Psychology: A specialty of professional psychology with distinct competencies and complexities. *Professional Psychology: Research and Practice, 39,* 529-536.

Thurlow, M. L., Quenemoen, R. F., & Lazarus, S. S. (2011). *Meeting the needs of special education students: Recommendations for the Race to the Top consortia and states.* Paper produced in partnership with Arabella Advisors, https://nceo.umn.edu/docs/OnlinePubs/Martha_Thurlow-Meeting_the_Needs_of_Special_Education_Students.pdf

Tilly, W. D. (2008). The evolution of school psychology to science-based practice: Problem solving and the three-tiered model. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology IV* (pp. 17-36). Bethesda, MD: National Association of School Psychologists.

Truscott, S. D., Kreskey, D., Bolling, M., Psimas, L., Graybill, E., Albritton, K., & Schwartz, A. (2012). Creating consultee change: A theory-based approach to learning and behavioral change process in school-based consultation. *Consulting Psychology Journal: Practice and Research, 64,* 63-82. doi: 10.1037/a0027997

U.S. Department of Education, National Center for Education Statistics. (2011a). *Mathematics 2011: National Assessment of Educational Progress at grades 4 and 8* (NCES: 2012-458). Retrieved from http://nces.ed.gov/nationsreportcard/pdf/main2011/2012458.pdf

U.S. Department of Education, National Center for Education Statistics. (2011b). *Reading 2011: National Assessment of Educational Progress at grades 4 and 8* (NCES: 2012-457). Retrieved from http://nces.ed.gov/nationsreportcard/pdf/main2011/2012457.pdf

Unruh, S., & Mckellar, N. A., (2013). Evolution, not revolution: School psychologists' changing practices in determining specific learning disabilities. *Psychology in the Scools, 50,* 353-365. doi: 10.1002/pits.21678

Vanderwood, M. L., Geraghty-Jenkinson, C., & Kong, R. (2015). Policy, structural, role, and knowledge barriers to best practice in school psychology. *Advances in Medical Education, 4,* 263-285. doi: 10.1007/978-3-319-02603-9_16

VanVoorhis, R. W., & Levinson, E. M. (2006). Job satisfaction among school psychologists: A meta-analysis. *School Psychology Quarterly, 21,* 77-90.

Vo, A. K., & Sutherland, K. S. (2012). Best in class: A classroom-based model for ameliorating problem behavior in early childhood settings. *Psychology in the Schools, 49,* 402-415. doi: 10.1002/pits.21609

Wahlstrom, K., Louis, K. S., Leithwood, K., & Anderson, S. E. (2010). *Investigating the links to improved student learning: Executive summary of research findings*. Retrieved from Wallace Foundation website: www.wallacefoundation.org/knowledge-center/school-leadership/key-research/Documents/Investigating-the-Links-to-Improved-Student-Learning-Executive-Summary.pdf

Waldron, N. L., & McLesky, J. (2010). Establishing a collaborative school culture through comprehensive school reform. *Journal of Educational and Psychological Consultation, 20*, 58-74. doi: 10.1080/10474410903535364

Watkins, M. W., Crosby, E. G., & Pearson, J. L. (2001). Role of the school psychologists: Perceptions of school staff. *School Psychology International, 22,* 64-73.

Wei, R. C., Darling-Hammond, L., & Adamson, F. (2010). *Professional development in the United States: Trends and challenges*. Retrieved from the Learning Forward website: http://www.learningforward.org

Weiss, I. R., & Pasley, J. D. (2006). *Scaling up instructional improvement through teacher professional development: Insights from the local systemic change initiative* (CPREPolicy Brief No. RB-44). Consortium for Policy Research in Education. Retrieved from http://files.eric.ed.gov/fulltext/ED493115.pdf

Wu, Y-C., Liu, K. K., Thurlow, M. L., Lazarus, S. S., Altman, J., & Christian, E. (2012). *Characteristics of low performing special education and non-special education students on large-scale assessments* (Technical Report 60). Retrieved from National Center on Educational Outcomes website: https://nceo.umn.edu/docs/OnlinePubs/Tech60/TechnicalReport60.pdf

Ysseldyke, J. E., & Reschly, D. J. (2014). The evolution of school psychology: Origins, contemporary status, and future directions. In P. Harrison & A. Thomas (Eds), *Best Practices in School Psychology V* (5th Ed.). Bethesda, MD: National Association of School Psychologist.

Ysseldyke, J. E., Burns, M., Dawson, P., Kelley, B., Morrison, D., Ortiz, S. et al. (2006). *School psychology: A blueprint for training and practice III*. Bethesda, MD: National Association of School Psychologists.

2 SPECIAL EDUCATION TEACHERS' AND PROFESSIONAL LEARNING PROVIDERS' PERSPECTIVES OF THE FEATURES OF EFFECTIVE PROFESSIONAL LEARNING: A Q METHODOLOGY STUDY

Introduction

Outcomes of Students with Disabilities (SWDs)

Many of the 13% of public school students who receive special education services under the Individuals with Disabilities Act (Aud et al., 2011; IDEA, 2008; National Center for Education Statistics, 2016) struggle with school and adulthood. Achievement levels for this subgroup are significantly lower than their peers who are non-disabled despite evidence the majority (80 to 85%) can meet the same standards with appropriate services and supports (Cortiella, 2007; Thurlow, Quenemoen, & Lazarus, 2011). For example, on the 2011 National Assessment of Educational Progress, only 32% of 4th graders with disabilities scored at or above the basic level in reading compared to 70% of their peers who are non-disabled (U.S. Department of Education, National Center for Education Statistics [NCES], 2011b); a significant gap also existed for mathematics and 8th graders (NCES, 2011a; 2011b). One result of these significant differences is 14% of the schools that did not meet adequate yearly progress (AYP) standards failed solely because the students with disabilities (SWDs) subgroup did not reach their AYP goals (Taylor, Stecher, O'Day, Naftel, & Le Floch, 2010). In addition to academic challenges, many SWDs exhibit emotional and behavioral difficulties that negatively impact their educational progress. For example, SWDs experience lower peer acceptance; hence, are at an increased risk of depression and anxiety, (Emery & Vandenberg, 2010; Rose, Monda-Amaya, & Espelage, 2011), and were suspended from school at twice the rate as their typical peers

during the 2009-2010 school year (Losen & Gillespie, 2012). Such factors potentially decrease instruction time and further alienate these students from school and learning.

Academic, behavioral, and emotional challenges faced by SWDs compound at the secondary level and continue to impact many SWDs as adults. For instance, SWDs tend to drop out of high school without earning a diploma or GED at twice the rate as peers who are non-disabled (Aud et al., 2011). Eight years post high school, when compared to young adults in the general population, young adults with disabilities have a significantly higher rate of unemployment, and those who did work averaged less than half the hourly wage of their peers (Bureau of Labor Statistics, 2012; Newman et al., 2011).

Increased Accountability in Special Education

To improve these identified negative outcomes experienced by SWDs, recent federal mandates have focused on school accountability in special education by targeting both the achievement of SWDs' and the competency of special education teachers' (SETs). The No Child Left Behind Act (NCLB) of 2001 (2002) and reauthorization of the IDEIA (2004) aimed to improve results for SWDs and required *all* students meet AYP on state academic content standards. These laws mandated SWDs have increased access to and achievement in the general education curriculum (e.g., inclusion; Holdheide & Reschly, 2008). Since experts continue to identify teacher quality as the most important school-based factor in student achievement (Borko, 2004; Wei, Darling-Hammond, & Adamson, 2010; Stronge, Ward, & Grant, 2011), the more recent Every Student Succeeds Act (2015) ensures SWDs have access to the general education curriculum as well as evidence-based interventions and practices. To achieve these mandates and improve in- and post-school outcomes for SWDs, current SETs need in-depth content area knowledge (e.g., science); strong understanding of pedagogy; and, the ability to

provide appropriate, evidence-based academic and behavioral interventions (Cook, Smith, & Tankersley, 2011; Leko & Brownell, 2009).

Success of Evidence-Based Practices in Special Education

Evidence-based practices are especially critical for SWDs, as these students have learning needs requiring the most effective instructional and behavioral plans to succeed (Cook & Schirmer, 2006; Cook et al., 2011; Vaughn & Dammann, 2001). Researchers (e.g., Cook & Schirmer; Cook et al.) recognize practices unique to SWDs, special education settings, and the competencies of SETs. Stringent guidelines also exist to help identify evidence-based interventions with credible research on positive outcomes for SWDs (e.g., Graham, 2005; 2009; Mazzotti, Rowe, & Test, 2012; Spooner, Knight, Browder, & Smith, 2012). These practices rely on SETs' deep content knowledge and ability to recognize student difficulties, implement appropriate and intensive instruction, and monitor progress frequently (Brownell, Billingsley, McLeskey, & Sidelar, 2012; Cook et al.). SETs additionally need strong collaboration skills to work productively with general education teachers (i.e., GETs; McKenzie, 2009; Mostert, 2011) as SWDs are spending more time in the general education classroom (McLeskey, Landers, Hoppey, & Williamson, 2011). SETs need expertise in the subject-matter, pedagogy, and evidence-based practices to improve SWDs' achievement because what SETs know and do (i.e., practice) impacts student learning.

Under Qualified SETs

Despite evidence that strong instruction and evidence-based practices can substantially improve outcomes for SWDs, many SETs are not prepared to implement the changes necessary to achieve better outcomes. A national shortage both in quality and quantity of SETs has persisted for years (Boe & Cook, 2006). For example, the National Council on Teacher

Quality's Teacher Prep 2014 Review (Greenberg, Walsh, & McKee, 2015) reported that only 2% of the special education teacher preparation programs nearly meet or meet the standard of content mastery for their students. For many SETs, their minimal training in academic content areas, pedagogical techniques, and behavioral interventions results in education that does not meet the unique needs of SWDs (Boe, Cook, & Sunderland, 2007; McLeskey & Billingsley). Even SETs who completed traditional preparation programs may lack information about how to provide specific content area instruction needed to adapt and deliver the general education curriculum (Brownell, Ross, Colón, & McCallum, 2005; Thorlow et al., 2011). These shortcomings in SETs' training often result in SETs using non-evidence-based interventions that fail to mitigate the effects of students' disabilities (Burns & Ysseldyke, 2009; Jones, 2009; Smith, Richards-Tutor, & Cook, 2010). Furthermore, many SETs never receive training in collaboration and are unprepared to work productively with GETs in inclusive classrooms (McKenzie, 2009). These issues contribute to SETs having the highest turnover rate in the teaching profession (Aud et al., 2011).

Professional Learning (PL) Can Provide Training for SETs

Instructional practices of SETs has been shown to improve with increased opportunities to participate in effective PL, collaborate with other special educators, apply research to practice, and receive constructive feedback (Correa & Wagner, 2011; McLeskey, 2011; Odom, 2009). Consequently, legislators, educators, and researchers have prioritized professional learning (PL; professional development) as a promising intervention to improve the instructional practices of current SETs and, thus, the outcomes of SWDs (Correa & Wagner; Klingner, Boardman, & McMaster, 2013; McLeskey & Billingsly, 2008; Odom). As an example of this improved approach, the National Center for Learning Disabilities (2010) recommended SETs participate in

ongoing PL focusing on evidence-based practices and pedagogical content knowledge so they know a variety of interventions and curricula to maximize the achievement of SWDs. NCLB (2002) requires states, districts, and schools to provide "high-quality, sustained, intensive, and classroom-focused" PL, which specifically does not include "one-day or short-term workshops or conferences" ((Sec 34 (A)(v)(II)).

Research on Effective PL in General Education

There is limited research available on the features of effective PL for SETs; so, special education practices currently often rely on evidence from the general education literature (Brownell, et al., 2012; McLeskey, 2011; Sidelar, Brownell, & Billingsley, 2010). Learning Forward's 2011 *Standards for Professional Learning*, developed in collaboration with over 40 PL and educational organizations, reflected the most recent compilation of research linking features of effective PL to improved instruction and student learning in general education. These seven standards work in partnership and include opportunities to participate in *Learning Communities*, skillful and supportive *Leadership*, sufficient *Resources*, formative and summative use of *Data*, appropriate *Learning Designs*, substantial *Implementation* support, and content that is focused on student and educator *Outcomes* (Learning Forward). The core structural features of high-quality PL programs identified throughout the literature are incorporated into one or more standards; these include PL that is content-focused, coherent with educators' knowledge and other school initiatives, of sufficient duration, incorporates active learning, and encourages collective participation of teachers in small group learning communities (Blank & de las Alas, 2009; Garet, Porter, Desimone, Birman, & Yoon, 2001; Wei et al., 2010). The Learning Forward standards also address needed political (e.g., time, administrator support, and resources) and cultural (e.g., teachers' values and school culture) support to enhance sustained teacher

implementation of the PL content (Buczynski & Hansen, 2010; Johnson, 2006). Key prerequisites for effective PL include ensuring participants are committed to meeting the needs of all students, motivated and ready to learn, able to listen to and respect others, able to acknowledge their own learning needs, and dedicated to continued learning until they are fluent in new practices (Learning Forward).

Research on PL in Special Education

Limited research exists on the relationship between special education PL, SETs' practice, and the outcomes of SWDs as most of the studies focus on GETs exclusively or on the joint efforts of special and general education teachers. One three-person case study and cross-case analysis (Dingle at al., 2011), where the participants received PL with several evidence-based elements (i.e., content focused, teacher-centered, active learning, coherence with curriculum and district standards, and duration), found that despite SETs attempts, not all teachers were able to effectively implement the content from their training. Factors influencing the successful use of the PL content included: subject matter knowledge, SETs' motivation to participate in the PL and change instruction, and SETs' willingness to modify curriculum used in the classroom (Dingle et al.). A similar high-quality PL effort for five elementary SETs (Brownell et al., 2014) discovered individual teacher qualities (i.e., understanding of effective special education practice and motivation), contextual barriers (i.e., resource availability, such as time and curriculum materials, and successful collaborations with GETs), and PL components (i.e., expert sources of information or peer feedback depending on teacher knowledge) influenced the quality of changes to instructional practices in the classroom.

Another study designed to directly investigate this relationship used a value-added model with longitudinal data from Florida and reported little support for special education PL on SETs'

contributions to SWD's achievement (Feng & Sass, 2012). However, the only specifics of PL the authors used in the calculations were the subject matter (i.e., math or reading/language arts) and hours of training (i.e., ranged from 11.66 to 3.25 hours per year; Feng & Sass), thus neglecting several variables of interest identified by Learning Forward and similar research (Sidelar et al., 2010). There are reasons to suggest that the PL provided for the SETs in Florida was similar to the PL found in the general education research across the United States (i.e., short-term and unconnected; Wei et al., 2010) and did not meet the high-quality standards required for SETs' pedagogical change and positive effects on SWD's learning.

While the majority of the remaining research that does exist regarding effective PL in special education either lacked rigorous experimental design or was focused on GETs learning to work with SWDs, the results do support many of the features of PL identified in the general education literature (Brownell, Lauterbach, Benedict, Kimerling, Bettini, & Murphy, 2012; Brownell, Billingsley, et al., 2012; Lang & Fox, 2003; Klingner, 2004; McLeskey, 2011). Several researchers cited improvements in special education practices and, in some cases, SWDs' achievement when PL programs included extended time, content-focused material, collaboration, differentiation to the context, practice with feedback, and sustained support for implementation (e.g., Browder, Jimenez, Mims, Knight, Spooner, Lee, & Flowers, 2012; Brownell, Lauterbach, et al.; Boudah, Blair, & Mitchell, 2003; Dingle et al., 2011; Osipova, Pirichard, Boardman, Kiely, & Carroll, 2011; Strieker, Logan, & Kuhel, 2011).

Recent attention within the special education community has promoted the use of implementation science with PL to scale-up SETs' sustained and reliable use of evidence-based practices (Odom, 2009). This model suggests PL should provide specific content knowledge and materials to use to support the intervention, have organizational support, encourage collaboration

and positive relationships among the participants, and support implementation of the intervention through ongoing coaching and technical assistance (Odom). Much is unclear, however, about the most effective PL designs needed to meet the learning needs of SETs and support subsequent implementation of the PL content (Sidelar et al., 2010). Deeper understanding, including research data, is needed on the relationship between the features of high-quality PL, how SETs learn from PL, and the conditions that support this learning and its classroom implementation (Borko, 2004; Clarke & Hollingsworth, 2002).

Experts have called for more research to better align the identified features of PL from general education to the needs of special educators and account for SETs' unique preparation and roles (Browder et al., 2012; Odom, 2009; Sidelar et al., 2010). Researchers have argued any effort to change teacher practices and implement educational reform must first consider what teachers think about the reform (Cronin-Jones, 1991; Harwood, Hansen, & Lotter, 2006). In the limited studies used to explore educators' perspectives about the features of effective PL, only a few included PLPs (i.e., PL provider) and none involved special educators. For example, Thorman (2006) used Q methodology to investigate GETs' perspectives of the five core features of PL (Garet et al., 2001) and found teachers reported three distinct views of PL. PL was identified as vital to desired professional growth, an opportunity to collaborate with peers, and a source of concrete information and practical applications (Garet et al.). Rogers and colleagues (2007) interviewed PLPs and science and math teachers about the features of effective PL and found both groups reported the importance of the content having classroom application (i.e., activities to implement and providing resources for implementation), active learning, and opportunities for collaboration and networking (Rogers et al.). The PLPs also discussed pairing

feedback with active learning, including the facilitators in the networking (i.e., not just participants), as well as improving teacher knowledge (Rogers et al.).

Current Study

While researchers are beginning to study effective PL in special education, they have not yet explored the perspectives of SETs and special education PLPs. The purpose of this study was to investigate SETs' and special education PLPs' perspectives of PL, including the most recently identified elements of effective PL. This is a critical topic given the increases in school accountability and the need to develop the knowledge and skills of current SETs so they can improve the outcomes of SWDs. Bandura's (1986) social cognitive theory suggests people tend to act according to their beliefs. Using Bandura's theory suggests perspectives of key special education PL stakeholders regarding elements of effective PL are at the core of educational change for SWDs. Understanding these perspectives can help future PL programs for SETs be executed, accepted, and enacted more effectively (Baker 2006; Papworth & Walker, 2008). In this study, *effective PL* was defined as participants successfully learning and then implementing the PL content in their school setting. Also, for this study, SET participants will be referred to as "Consumers", and special education PLP participants will be referred to as "Providers." This study asked, "What do Consumers and Providers believe are the most and least important factors to SETs successfully using the content from their PL experiences in their school setting?" to identify and describes the participants' perspectives and explicate possible patterns related to their specific roles or other characteristics.

Method[1]

General Overview of Q-Methodology

To gain knowledge regarding Consumers' and Providers' perspectives about the important factors of effective PL for SETs, this study employed Q methodology, which is a structured study of human subjectivity (Brown, 1980; McKeown & Thomas, 1988). While Q methodology refers to human subjectivity with a range of interchangeable terms (e.g., attitudes, beliefs, viewpoints, etc.), this study will only use the term "perspectives". William Stephenson introduced Q methodology in the 1930s to explore the social discourses and perspectives of individuals or groups involved in decision making (McKeown & Thomas). Use of Q methodology takes advantage of individuals' "desire to structure and ascribe meaning to all 'impinging stimuli and events'" (Harvey as quoted in Watts & Stenner, 2005 p. 76) and is based on the premises that subjectivity is *communicable* and *self-referent*, as people can express their views about a topic from their own perspective (Addams, 2001; Webler, Danielson, & Tufdler, 2009). Q methodology has been utilized to investigate patterns of perspectives among groups of people on numerous issues across disciplines including psychology, political science, advertising, and education (Watts & Stenner). Use of Q methodology studies not only allow the researcher to systematically examine and understand different social perspectives, but also to reveal similarities and differences between individuals or groups based on their perspectives (McKeown & Thomas; Webler et al.).

Combining the strengths of quantitative and qualitative methods, Q methodology requires a systematic data collection and rigorous factor analysis to explore personal perspectives and

[1] Though referenced throughout the Method and Results sections, Brown (1980; 1993), McKeown and Thomas (1988), van Exel and de Gaaf (2005), Watts and Stenner (2005; 2012) were invaluable to developing these sections.

experiences held by a specified group of people (Baker, 2006; Brown, 1980). Q studies elicit individuals' perspectives through the sorting of statements (i.e., Q set) selected from a wide range of relevant literature and resources (i.e., concourse) about a given topic. Participants rank (e.g., from "agree" to "disagree") each statement relative to each other based upon their own points of view. The participants' subjective input produces objective structures (i.e., Q sorts) of their perspectives on the issue being studied, which are then analyzed using statistical techniques of correlation and by-person factor analysis to reveal patterns within and across participants, who are the variables in the analysis (i.e., not the statements; Watts & Stenner, 2005). Individuals with similar orientations and preferences align on the same factor and those that differ define other factors (Brown). Q methodology studies are characterized by the following five steps: (a) delineation of the *concourse*, (b) development of the *Q set*, (c) selection of the *P set*, (d) completing the *Q sort*, and (e) *factor analysis* and *interpretation* (Brown; van Exel & de Graaf, 2005). A comprehensive description of these steps as applied to this study follows.

Concourse

The *concourse* is the population of common knowledge, perspectives, discourses and "flow of communicability surrounding any topic" (Brown, 1993; p. 94). Most often in the form of subjective statements, not facts, the concourse represents expert and common opinions, commentary, arguments, and conversations (Brown; van Exel & de Graaf, 2005). The collected statements can be obtained from interviews, observations, literature (e.g., newspapers, novels, or scientific research), or a combination of communication formats (McKeown & Thomas, 1988; van Exel & de Graaf; Watts & Stenner, 2012). Guidelines suggest the population of items should consist of 100 to 300 statements or be about three times the size of the desired Q set (Webler et al., 2009).

The concourse for this study was collected from a thorough literature review (i.e., as per Watts & Stenner, 2005) of related educational documents. Peer-reviewed journals, scholarly books, professional publications, conference papers, and government reports were reviewed for statements regarding proposed essential elements of effective PL for educators. An electronic search was conducted using the following databases: Academic Search Complete (EBSCO), ERIC (EBSCO), Professional Development Collection (EBSCO); PsycINFO (EBSCO), and ProQuest Education Journals (ProQuest). Search words included "professional development", "professional learning", "staff development", and "in-service", and were often combined with other keywords such as "teachers", "education", and "special education". To locate sources not yet indexed in the traditional databases, the *Google* search engine was employed and online publications of key educational research centers were examined. The references of each of the retrieved studies were carefully searched for additional publications. All documents used to create the concourse met the following criteria: contained information on important features of PL for teachers in primary or secondary education in the United States; published between January 1, 2008 and December 31, 2012; and, written in English.

Data (i.e., statement) collection and analysis occurred simultaneously (Glaser & Straus, 1967). Each document that met the inclusion criteria was immediately reviewed and any statement(s) about key features of PL were compared to those previously collected (Glaser & Straus). All novel statements were recorded. This process continued until data saturation (i.e., data redundancy); additional documents analyzed failed to produce new statements (Lincoln & Guba, 1985). When statements obtained were repetitive, review of additional documents was reasoned unnecessary. The decision of data saturation was facilitated by the constant comparison method and "grounded in the empirical confidence attained from repeatedly

comparing data to additional data" (Cutcliffe & McKenna, 2002, p. 614). The literature review included 47 documents (see Appendix A for summary of literature review) and returned 249 statements about the essential elements of effective PL, which were enough statements to select the Q set. Additional measures, which are explained in the *Validity* section, were taken to ensure the representativeness of the concourse.

Q set

The concourse typically contains too many statements for participants to manage and is consequently reduced to a subset, which is called a *Q set* (van Exel & de Gaaf, 2005). To balance comprehensive coverage of the topic with a manageable number of items, Q methodology guidelines suggest researchers select between 40 and 80 statements from the concourse for the Q set (Brown, 1980; Watts & Stenner, 2005). An effective Q set broadly represents the subject being investigated without redundancy or biases (Watts & Stenner; van Exel & de Gaaf). Researchers can use structured sampling methods to systematically reduce the population of statements in a concourse. Structured sampling, or applying Fisher's methods, involves identifying or imposing (i.e., theory-based) categories onto the concourse of statements and then selecting approximately equal number of statements from each defined category (McKeown & Thomas, 1988; van Exel & de Gaaf; Watts & Stenner). This process forces the selection of varied statements to make the Q set broadly representative while still exerting little influence over the factors that emerge (Brown, 1980; McKeown & Thomas). Participants do not necessarily consider this *a priori* meaning of a structured Q set since they just see a collection of statements about a topic (Brown). Ultimately, researchers claim if the final statements represent all the relevant perspectives on the subject, how (i.e., sampling process) a Q set is developed is inconsequential (Watts & Stenner).

To create a widely representative Q set, this study used a structured sampling procedure based on Fisher's (1960) balanced-block design using a theoretical framework. This method is often cited as the best way to ensure the items of a Q set are representative of all the themes within the subject being explored (Brown, 1980; McKeown & Thomas, 1988; Stephenson, 1953). Learning Forward's (2011) seven standards of PL constituted the seven dimensions of the block design. As explained in the literature review, Learning Forward's standards reflect the most recent compilation of studies on the essential elements and conditions of PL needed to produce positive effects on teaching instruction and student learning.

Each of the 249 statements in the concourse was assigned to one of the eight categories (i.e., the seven PL standards and an other category). To represent as many ideas as possible, while keeping the total number of statements manageable, each category was reduced to six statements. Within each category, unique statements were preserved and statements with similar ideas or meaning were combined (Jonson, Milltello, & Kosine, 2008; Oh & Kendall, 2009; Watts & Stenner, 2012). Statements were also edited to improve readability by standardizing the appearance (i.e., all statements began with same prefix) and increase clarity by avoiding technical terminology and multiple meanings (Watts & Stenner). A professor and expert in the field of PL helped the primary author classify and edit the statements. This systematic process continued until six statements were in each of the seven categories. Additionally, four statements were added to the Q set that did not correspond to a standard but were found in the literature (i.e., other category). This Q set was evaluated by three experts in the field of special education and/or PL (i.e., professors with extensive research experience in the area). The experts reviewed the statements to improve readability and verify their validity by ensuring they were balanced and broadly represented the topic being studied (Brown, 2004; Gallagher & Porock,

2010; Valenta & Wigger, 1997). As a result of this review, some cards were adjusted to avoid duplicates and unclear or unintended content. Three certified SETs (i.e., one was also a special education PLP) then piloted the research materials and tested the Q statements, instructions, and time usage in the study (Øverland, Thorsen, & Størksen, 2012; Watts & Stenner, 2012). Again, subsequently, some cards and instructions were modified to improve clarity. The final Q set for this study consisted of 45 statements that were printed on separate cards and randomly numbered from 1 to 45 for recording purposes; these cards are called the *Q deck* (see Appendix B for Q deck statements).

P set

The *P set* refers to the group of participants who sort the statements. One of the fundamental elements of Q methodology is only a limited number of distinct perspectives (i.e., viewpoint) exist; therefore, only enough participants are needed to establish the existence of a perspective (Brown, 1980; Webler et al., 2009). With a small number of participants, the P set is not randomly selected but chosen because of the nature of the problem; a connection, such as a related experience, to the question being asked (i.e., condition of instruction); or, a personal experience with the topic being investigated (Brown). In accordance with Q methodology, purposive sampling was used to ensure the collection of meaningful and relevant data (Brown; Miles & Huberman, 1994). SET participants, which are referred to as "Consumers", and special education PLP participants, which are referred to as "Providers", were selected as they were representative of the issues and could provide perspectives about the important factors of effective PL for SETs. The number of participants needed was based on the following guidelines: at least three or four participants should define each anticipated factor, which is typically five or less, and the number of participants should not exceed the number of statements

in the Q set, with a ratio of 3 statements to 1 participant being common (i.e., as employed by Webler et al.). Based on these guidelines, the author targeted a P set consisting of 15 to 20 Consumers and 15 to 20 Providers.

Metropolitan area. All participants were recruited from a large metropolitan area in the southeast United States with over 4,319,500 residents spanning urban, suburban, and rural communities in 16 counties. According to the U.S. Census Bureau (2011), the metropolitan area's racial composition is approximately, 55% White; 32% Black or African American; 5% Asian; 2.5% two or more races; and less than .5% American Indian, Alaskan Native, or Pacific Islander as well as 11% Hispanic or Latino origin. The median population per square mile in the counties of the metropolitan area is 644.75 people and ranges from 82.7 to 2585.7 people per square mile (*SD* = 796.46); and, the median household income is $55,291.00 and ranges from $34,068.00 to $88,262.00 (*SD* = 13967.26).

According to the state's department of education, there are 20 school systems in the metropolitan area as described by the Special Education Support System (SESS; see Appendix C, Table C1). SESS is a network of 17 regional state-funded educational support agencies across the state to support school districts. Three SESS agencies: Metro East, Metro South, and Metro West serve the 16 county-based school districts and 4 independent school districts in the metropolitan area. During the 2010-2011 school year, the 20 school systems enrolled a total of more than 744,750 students, of which about 10.5% (i.e., approximately 77,911 students) were enrolled in special education.

Consumers. Within the already established 15 to 20 Consumers needed for the study, to help to establish variation of experiences, identified characteristics were used to categorize and determine similar samples from each category. SETs' years of experience, type of certification,

and grade-level teaching are some of the many individual characteristics that may impact professional needs and PL desires. Regarding years of experience, studies have highlighted the unique demands on beginning, early career SETs, such as adapting curriculum, paperwork, and collaborating with GETs and resource staff (Boe, Cook, & Sunderland, 2008; Brownell, Hirsch, & Seo, 2004). Many novice SETs report not receiving needed mentoring, PL, and support as the reason why they leave the profession within the first five years, which is at a rate two and a half times that of their general education colleagues (Boe et al.; Brownell et al.). In comparison, researchers have argued SETs with more years of experience tend to be set in their way and not open to or supportive of new research or changes associated with PL (Lang & Fox, 2003). Regarding the type of special education certification, alternative certification programs tend to emphasize content but focus less on the technical aspects of teaching, such as lesson planning, instruction, and classroom management (Boe et al., 2007; McLeskey & Billingsley, 2008). Traditional certification programs provide more broad education on the technical aspects of teaching but lack in-depth content instruction (Brownell et al., 2005; Thorlow et al., 2011). Researchers argue to help SWD meet content area standards, SETs need to have in-depth subject-matter knowledge as well as special education pedagogy, especially at the secondary level (McLeskey & Billingsley). Given the possible impact of years of experience, type of certification, and grade-level instruction, this study took these characteristics into account during sampling (i.e., Proposed Maximum Variation Sampling of Participants).

The primary researcher contacted SETs by: (a) distributing a handout inviting them to participate during a PL program at one of the three metropolitan SESS agencies and/or (b) inviting them to participate in the study via an email sent to the special education director of their school system (see Appendix D for study materials). All special education directors in the 20

school districts of this metropolitan area were sent an email explaining the research objective and overview of the study and requesting they forward the study invitation to all SETs in their school district.

SETs who responded and contacted the primary researcher answered the following four questions to ensure their eligibility: (a) currently employed as a SET for more than one complete school year; (b) currently working in a school system within the metropolitan area; (c) participated in at least one PL program in current position as a SET; and, (d) willing to provide their perspective on the important factors of effective PL for SET. To ensure representativeness of the identified characteristics in the small sample size (Miles & Huberman, 1994, Patton, 1990), the SETs who met the criteria then answered the following questions: (a) years of experience in current role as SET (b) grade level currently teaching (i.e., elementary or secondary), (c) SET certification (i.e., traditional or alternative), and (d) school system currently employed. Maximum variation sampling (i.e., type of purposive sampling) was then used to select SETs and maximize the diversity among the participants according to the identified characteristics and belief that at least three perspectives are needed for a factor to be significant (see Appendix C, Figures C1 and C2 for sampling information). This heterogeneity of Consumers is important in the analysis to see if any patterns emerge across all SETs or relative to individual characteristics (Patton).

Providers. Consistent with the methodology's use of non-probability sampling to collect meaningful data, purposive sampling was also used to identify and recruit special education PLPs who had experiences and opinions on PL with SETs (Miles & Huberman, 1994; Patton, 1990). The network of SESS agencies provide PL, technical assistance, and coaching on variety of topics related to the achievement of SWDs, such as data analysis, evidence-based mathematics

and reading instruction, and the implementation of state curriculum standards. Since the 20 school districts in the metropolitan area are served by three of these regional agencies, the directors of Metro East, Metro South, and Metro West were each contacted via email explaining the research objective and overview of this study with a request they forward the study invitation (see Appendix D for study materials) to their staff, who provide special education training and resources to educators. Special education PLPs who responded and were selected met the following criteria: (a) currently employed as a PL provider for more than one complete school year; (b) in current position as PL provider, worked in at least one of the school systems within the metropolitan area; (c) in current position as PL provider, helped facilitate at least one PL program that included SET; and, (d) willing to provide their perspective on the important factors of effective PL for SET.

All participants who were interested in participating in the study contacted the primary author via email and/or phone per the study invitation directions. If the participants met the criteria and were selected to participate in the study, the primary author arranged to meet them at times and places of their choosing, as long as it met the criteria of having ample table room for the materials and being a quiet room for them to perform the study and interview in solitude. Participants completed the study during scheduled individual one-hour timeslots. All participants received a $10 gift card to a national bookstore for their time.

Demographic Information of P-Set (Participants)

Information collected ensured all participants met the proposed criteria as well as the maximum variation sampling (i.e., see Appendix C, Figure C2 for Actual Maximum Variation Sampling of Consumer Participants). Data were collected from 18 Consumers and 17 Providers within the metropolitan area, serving the three SESS. As discussed, Q methodology is not based

on a high number of participants (i.e., n is small by design), as it only requires enough participants to establish the existence of its factors (Brown, 1980; Webler et al., 2009). Participants are strategically chosen (i.e., this study used specific parameters and maximum variation sampling); and, for this study, the number of participants needed to be between 15 and 20 participants for each group. Table 2 depicts the following demographic information for each participant: gender, age, race, highest degree, SESS, years in current role, years as SET, and years in education.

Table 2

Demographic Characteristics of Participants Grouped by Position

	Consumers (N=18)		Providers (N=17)	
Characteristics	n	%	n	%
Gender				
Female	15	83.3	15	88.2
Male	3	16.7	2	11.8
Age				
≤ 25	2	11.1	0	0.0
26-35	3	16.7	4	23.5
36-45	4	22.2	6	35.3
46-55	3	16.7	1	5.9
>55	6	33.3	6	35.3
Race				
African-American	6	33.3	5	29.4
Caucasian	11	61.1	11	64.7
Hispanic	1	5.6	1	5.9
Highest Degree				
Bachelors	5	27.8	1	5.9
Masters	6	33.3	3	17.6
Masters +30/Specialist	6	33.3	10	58.8
Doctoral	1	5.6	3	17.6
SESS[a]				
MESESS	9	50.0	8.5	50.0
MSSESS	2	11.1	1.5	8.8
MWSESS	7	38.9	7.0	41.2
Years in Current Role				
0-4	9	50.0	2	11.8
5-9	2	11.1	9	52.9
10-19	4	22.2	4	23.5
≥ 20	3	16.7	2	11.8
Years as SET				
0-4	4	22.2	6	35.3
5-9	4	22.2	3	17.6
10-19	6	33.3	4	23.5
≥ 20	4	22.2	4	23.5
Years in Education				
0-4	2	11.1	0	0.0
5-9	5	27.8	1	5.9
10-19	6	33.3	8	47.1
≥ 20	5	27.8	8	47.1

[a] *Note*. Some Providers served two SESS and were counted half time in each.

Q Sort

Q sorting is the process of arranging statements along a continuum according to a rule, which is called the *condition of instruction* (McKeown & Thomas, 1988). In this study, the primary author, who interacted with all the participants, first read a brief introduction about the study (see Appendix D for study materials) and gave the participants the opportunity to ask questions before inviting them to review and complete a consent form (see Appendix D for study materials). After signing the consent form, to increase the level of confidentiality, participants received a participant generated code form (see Appendix D for study materials) and created their personal seven-digit identification code, which they used on all data collected instead of identifying information. Participants then received a manila envelope containing an envelope with the Q deck, form board, demographic questionnaire, record sheet with a figure printed on it that looks like the form board in miniature, pencil, permanent marker, and cassette tape. Participants were verbally instructed (see Appendix D for study materials) through a standard Q sort procedure, consisting of two phases (Watts & Stenner, 2012). First, the participants read through all the cards and sorted them into the following three piles: (a) a pile on the right for statements that you think are most important to teachers successfully using the content from their PL experiences in their school setting, (b) a pile on the left for statements that you think are least important to teachers successfully using the content from their PL experiences in their school setting, and (c) a pile in the middle for statements that you think are neutral and neither important or unimportant to teachers successfully using the content from their PL experiences in their school setting. There were no limits to the number of cards in each pile as this activity is meant to be a preliminary sort (Watts & Stenner).

The participants then sorted the three piles more specifically and ranked the statements from -5 (i.e., believed least important) to +5 (i.e., believed most important) in relation to SETs using the content from their PL experiences in their school setting (i.e., *condition of instruction*). Participants physically placed each card in the quasi-normal distribution matrix on the Form Board (see Appendix D for study materials). Studies have demonstrated it is the order (i.e., placement) of the statements in relation to each other not the shape of the distribution matrix (e.g., bell-shaped, flat, and free/open) that impacts the results (Brown, 1980; Cottle & McKeown, 1980). However, a flatter than normal distribution matrix was purposely chosen so participants had more opportunities to place statements at the extremes instead of the middle (i.e., no opinion) since they were expected to be informed and have opinions about the topic (Brown).

After participants felt the Q sort reflected their perspective, the researcher conducted individual interviews. Post-sort questions allowed participants to elaborate on their perspective and decision-making process from the Q sorts, which later were used as part of post-hoc analysis to aide in the interpretation of the factors that emerged during data analysis (Brown, 1980; Watts & Stenner, 2005). The semi-structured interviews asked the following open-ended questions (see Appendix D for study materials) about the cards given extreme rankings:

1. Which statements did you place in each of the extreme columns (i.e., +/-5 and +/-4)? Why did you place these statements in the extreme columns? Why do you agree/disagree with these statements most?
2. Why did you place the statements in the extreme columns (i.e., +/-5 and +/-4) and why do you agree/disagree with these statements most?

3. What other statements do you wish were included about the features important to special education teachers' successfully using of the content from their PL experiences in their school setting?
4. Did you have any problems or issues with any of the statements? If so, which ones and why? (Watts & Stenner).

All answers to the post-sort questions were tape recorded and notes were taken. After the post-sort interviews, participants completed a demographic questionnaire (see Appendices D for study materials) developed for this study while the researcher recorded the placement of the cards onto the record sheet (see Appendix D for study materials) according to their randomly assigned number.

Validity, Generalizability, and Reliability

Due to the nature of its instruments and application, traditional issues (i.e., R methodology) of validity and reliability do not apply to Q methodology studies (McKeown & Thomas, 1988). The researcher does not impose meaning to the instrument during its construction and application and external inference only occurs after the Q sort analysis (McKeown & Thomas). Since the purpose of using Q methodology is the inherent subjectivity within its design, there is no need for external validity.

Validity. In Q methodology, validity refers to the representativeness of the Q set. Since participants sort statements subjectively, their perspectives are their own and, consequently, cannot be right or wrong. As Brown (1980) argues, "there is no outside criterion for a person's own point of view" (p. 4). Validity in Q studies refers to the breadth and relevance of the Q set. In this study, the use of the balanced block design (Fisher, 1960) to select the statements ensured the Q set's representativeness. Additionally, having subject-specific experts thoroughly review

the Q set and SETs pilot the materials further established the content validity of the statements and their comprehensiveness. The post-sort interviews confirmed the validity of the concourse as participants generally responded the statements were representative of the elements effecting the implementation and effectiveness of PL. Participants did not offer any suggestions of items that were missing from the sort, further supporting the validity of the concourse.

Generalizability. Criticism of Q studies includes the limited generalization of the results to the larger population due to the small number of participants (van Exel & de Gaaf, 2005). This external reliability is of little concern in Q studies as the primary objective is "why and how people believe what they do" (Addams, 2001, p. 34) and not to test the distribution of perspectives within the larger population (Brown, 1993). The generalizability of this study is limited to its ability to describe and explain the experiences and perspectives of similar individuals in comparable situations. Due to the limited number of perspectives on any topic, findings can be identified that may lead to new insights as well as possible solutions and changes in PL for special education that positively impacts the success of SETs and SWDs. Q methodology is predominantly exploratory and aims to discover patterns of discourse from the "bottom up" (McKeown & Thomas, 1988) and is usually used as a starting point for future research and more quantitative confirmatory methods (Zabala, 2014).

Reliability. Reliability in Q methodology is concerned with the repeatability of the results. Previous test-retest studies have demonstrated a Q set yields similar perspectives (i.e., correlation coefficients of 0.8 or higher) not only when given to the same individuals at two points of time but also when administered under the same condition to different sets of people (Brown, 1980; Dennis, 1992/1993; Fairweather, 1981). Research results show high correlation coefficients (i.e., 0.80 or higher) when similarly structured yet different Q sets (parallel-forms;

i.e., from the same concourse) are administered to the same individuals (Thomas & Bass, 1992/1993). These reliability studies support the argument a limited number of distinct perspectives exist on any topic (Brown); therefore, any Q set containing a wide-range of Q statements can be used to identify these perspectives (van Exel & de Gaaf, 2005). Additional measures of factor reliability of rotated factors are explained in the Factor Analysis section.

Results

Q methodology was used in this study to better understand Consumers' and Providers' perspectives of the factors important to SETs successfully using the content from the PL in their school settings. While in traditional factor analysis items or variables are grouped according to shared variance to reveal a latent construct, in Q methodology, Q sorts are grouped according to shared variance to reveal underlying social perspectives (Brown, 1993). Each completed Q sort (i.e., participant), not statement, represents a single variable (Brown). The outcome of factor analysis in a Q-methodology study is to define factors supported by the correlation among the Q sorts of the participating respondents (Brown, 1993).

Overview of the Results

The data analysis in this research included two different participant groups (i.e., Consumers and Providers) analyzed separately to determine if the emergent perspectives differed based on receiving or giving SETs' PL. Eighteen variables for Consumers and 17 variables for Providers were factor analyzed independently. For each group, all completed Q sorts were entered and calculated in the PQMethod 2.11 program (Schmolck, 2002), which is specifically designed for Q Methodology data. This software is recommended and used in numerous studies employing Q methodology (Herington & Coogan, 2011; Davis & Michelle, 2011; Newman & Ramlo, 2010; Ramlo, 2008; Watts & Stenner, 2005; 2012), allowing researchers to enter Q sort

data, find inter-correlations between the Q sorts, and perform factor analysis. A three-step analysis of Q sorts was conducted for each participant group in this study (i.e., Consumers and Providers) and included: (a) determination of correlation, (b) factor analysis (i.e., factor extraction and selection, factor rotation, and calculation of factor scores), and (c) factor interpretation (Brown, 1980; Budaev, 2010; Watts & Stenner).

Correlation Matrix. The first step in the statistical analysis of the data was determining the correlation among all individual Q sorts (Brown, 1980; Budaev, 2010; Watts & Stenner, 2005; 2012). The correlation is calculated by forming the ratio of the sum of squares for two sorters combined to the sum of the squared differences and then subtracting this from 1.00. This is done for all of the participants to form a correlation matrix with all of the sorters listed on the row and the column. Since each respondent sorted the Q statements according to his or her own viewpoint, the correlation matrix depicts the extent to which participants arranged the 45 statements similarly (McKeown & Thomas, 1988; Watts & Stenner, 2012) or the relationship of each Q sort with the other sorts. The matrix includes the total variability present in the study, displaying correlation coefficients ranging from -1.0 to +1.0. A correlation of +1.0 represents a perfect correlation with cards sorted in an identical way as another participant, a correlation of -1.0 represents all cards sorted in an opposite column as another participant, and a correlation of 0.0 would represent no correlation between the Q sorts (Brown, 1980; Kline, 1994). Although formulation of the correlation matrix is necessary, it is not generally the point of interest in Q methodology. As stated by Brown (1993) “the correlation matrix is simply a necessary way station and a condition through which the data must pass on the way to revealing their factor structure” (p. 110).

Factor Analysis. The second step was the extraction of factors from the correlational matrix to identify the number of natural grouping of Q sorts by virtue of being similar or dissimilar to one another (Brown 1980; 1993; van Exel & de Graaf, 2005). Factor analysis was done to account for as much of the variance as possible by identifying relationships between the Q sorts in each group and any shared meaning present in each group of data (Watts & Stenner, 2012). Factor analysis is a procedure to identify the interrelationships among a large set of observed variables, resulting in data reduction into a smaller set of variables or factors with common characteristics.

A factor is a linear combination or cluster of related observed variables representing specific and distinct dimensions of a construct or an issue. The goal of factor analysis is to reach a smaller or parsimonious set of factors to best describe the interrelationship among the variables in a clear, succinct, and understandable manner (Watts & Stenner, 2012). Factor analysis involves factor extraction and selection, factor rotation, and the creation of factor scores.

Factor extraction. There are two common factor extraction methods in Q Methodology: principal components and centroid (Newman & Ramlo, 2010). The difference between the two approaches is negligible for most Q sorts and the resulting factor matrices (Harman, 1976; McKeown & Thomas 1988; Watts & Stenner, 2012). This study used the centroid extraction method as it is the recommended factor extraction process since it provides an indeterminate number of possible solutions to be evaluated by the researcher (Dziopa & Ahern, 2011; Watts & Stenner).

As a standard, the PQMethod 2.11 software program (Schmolck, 2002) provides eight un-rotated factors resulting from the centroid factor analysis. Consideration of the un-rotated factors was completed in order to determine the number of factors to use and rotate for this

study. The main objective of using these tools was to extract a smaller number of factors to explain larger amounts of the overall variance without exaggerating the specifics (Brown, 2009). As recommended (e.g., Hayton, Allen, & Scarpello, 2004; McKeown & Thomas, 1988; Watts & Stenner, 2012), a combination of methods was used to determine the number of factors to retain. Since this study, in keeping up with the Q methodology model, was exploratory in nature and had no a priori assumptions regarding the final set of factors, a statistical approach for guiding the selection of the factors for rotation was best.

Both statistical tests and non-statistical strategies are suggested to determine the optimal number of factors (Brown, 2009; Watts & Stenner, 2012). Webler et al. (2009) said, "There is no one objectively correct number of factors to use, and any number of factors will give you some insight into how people think about the issue" (p. 31). Fewer factors are suggested for simplicity as long as the important information regarding the embedded viewpoint is not sacrificed (Webler et al). Methods for limitation to support the researcher's determination of the number of factors for analysis can include: (a) Kaiser-Guttman criterion or eigenvalues, (b) looking at significant loadings, (c) Humphry's Rule, (d) percentage of total explained variance, and (e) subjective decision making based on researcher's discretion (Brown, 1980; Watts & Stenner).

First, the initial criteria for factor selection was the Kaiser-Guttman criterion involving the use of eigenvalues, which are the sum of squared loadings for factors (Brown, 1980) and indicate the amount of variance accounted for by the factor. Generally, eigenvalues greater than 1.00 are considered significant (McKeown & Thomas, 1988). But this limit often results in solutions containing an overly large number of factors (Cattell, 1978, Kline, 1994), so additional

statistical parameters are considered to inform factor selection and prevent retaining arbitrary factors with eigenvalues greater than 1.00.

Consideration of significant factor loadings, Humphrey's Rule, and the total amount of explained variance were used to help determine the appropriate number of factors. A significant factor has two or more variables loading above the cut-off point, which was the estimated error for 0.01 level of significance or $p < 0.01$ (Brown, 1980; Watts & Stenner, 2012). A significant factor loading at the 0.01 level is calculated using the following equation, 2.58 x $(1/\sqrt{number\ of\ items\ in\ Q\ set}$. For both groups, the significant factor loading at the 0.01 level equaled 2.58 x $(1/\sqrt{45})$ or 0.3846 rounded to .38. The researcher checked the factor loadings listed in each of the Unrotated Factor Matrices (see Appendices E and F, Tables E2 and F2) to see which remaining factors satisfy this criterion. Humphrey's rule "states that a factor is significant if the cross-product of its two highest loadings (ignoring the sign) exceeds twice the standard error" (Brown; p. 223). The standard error for both groups equals $1/\sqrt{(number\ of\ items\ in\ Q\ sest)}$) or $1/(\sqrt{45}$, which was .2981 rounding to .30. Lastly, Brown recommended if the factors retained account for at least 50% of the total amount of explained variance to be considered a sound solution on the basis of common factors. The explained variance represents the importance of a factor and is equal to the ratio of the eigenvalue over the number of variates (i.e., 18 for SETs and 17 for PLPs; McKeown & Thomas, 1988, p. 51). Finally, non-objective criteria (e.g., qualitative interpretation and inference) is used to guide the selection of factors until rotation has been completed (Brown; Watts & Stenner).

Factor Rotation. Factor rotation is done to determine meaning from the data (Brown, 1993) as it allows the researcher to view the subject matter in a focused way, which more accurately describes the viewpoints of the participants (Watts & Stenner, 2012). Specifically,

"unrotated factor loadings are [typically] superseded by an alternative set of loadings which give a more focused view" and thus offer another means by which to conduct factor analysis (Brown, 1999, p. 616). An orthogonal varimax rotation, a method offered by the PQMethod 2.11 (Schmolck 2002), was used in this research to examine the data objectively from different angles. This type of rotation was chosen because it is exploratory, supporting the study design, instead of rotating the factors based on preconceived theoretical notions (e.g., by hand; oblique). The varimax rotation did not affect the underlying relationships between the Q sorts found in the correlation matrix, although it shifted the perspective from which they were observed (van Exel & de Gaaf, 2005). Factor rotation also provided for the detection of factors which allowed for further analysis or replication by "producing better fitting solutions" (Kieffer, 1998, p. 11)

This rotation process makes it easier to interpret the factors by maximizing the amount of variance in each extracted factor within significance level of $p < 0.01$. A determination of significance at the level of 0.01 or 99% eliminated the likelihood of having the correlation happen by chance (Kline, 1994). For factor loadings to be significant at the $p < .01$ level, the equation is identical to finding significance described above. Factor loadings are significant when the factor scores exceed $2.58 \times (1/\sqrt{N})$, where N is the number of items in the Q-set (Brown, 1980). These values are in keeping with the suggestion proposed by Brown (1993) that a good rule of thumb for reaching the reliability coefficient for significance in Q methodology is when the correlation is between 2 and 2.5 times the standard error. In this case, factor scores are significant if they are +/- 0.38. Participants can have significant agreement or significant disagreement with the perspective the factor represents. These significant variables were manually flagged in PQMethod 2.11 (Schmolck 2002) for inclusion among the rotation of the sorts.

After the rotation is complete, PQMethod 2.11 (Schmolck, 2002) produces a table displaying the characteristics of factor reliability for all of the sorts in the group (see Appendices E and F, Tables E3 and F3). Factor reliability is based on the amount of Q sorts, average reliability of Q sorts, as well as the standard error of factor scores. The table lists the number of defining sorts, as Dennis (1986) suggested a view or perception associated with a factor in Q studies becomes stable with four or more loadings. The more persons or sorts defining a factor corresponds to a higher reliability and greater the confidence in the scores of the items composing it (Brown, 1980). Composite reliability scores provide an index of how much confidence can be placed in the factor, and a score above 0.95 means participants aligning with each factor will rank order the same statements the same way at least 95% of the time (McKeown & Thomas, 1988). Further, the standard error of factor scores, which derives from the normalized scores of the forced distribution, represents a value for measuring whether scores are significantly different between factors and helps determine statements that distinguish one factor from another. Standard errors between -0.5 and 0.5 indicate a significant difference between factors. While some researchers eliminate participants who do not load cleanly onto only one factor after rotation, Brown (1980) suggests not removing these participants who confound on multiple factors if it means the number of sorts per factor would be greatly reduced.

Prior to factor interpretation, researchers look at the correlation matrix between factor scores (see Appendices E and F, Tables E4 and F4) to understand the relationships between the various factors (Watts & Stenner, 2012). In particular, close attention is paid to any high or significant correlations. A greater than 0.5 correlation between the extracted factors indicates a high level of relationship between factors. When the correlation is high and positive between

factors, there is a potential participants' perceptions align with elements of both factors, one of the reasons Brown (1980) refrained from removing confounding sorts.

Factor Scores. The last step in the Q methodological analysis preceding interpretation of the factors is factor loading. After factor rotation, the PQMethod 2.11program (Schmolck, 2002) creates factor scores, or z-scores. A z-score is an average score given to a statement based on all the Q sorts associated with that factor (Brown, 1993). Z-scores show how far from the overall mean (i.e., measured in standard deviations) for the group a statement is and they represent the normalized scores, or transformed raw scores, to help factor and correlational analysis (Kline, 1993). While the software (Schmolck) creates factor ranks and z-scores for all the statements for each factor, only the significant scores, or the distinguishing statements, for each factor matter and will be discussed during the factor interpretation. A distinguishing statement for a factor is a statement whose score on that factor is significantly different from its score on any other factor at the 95% level or higher (i.e., $p > 0.05$). As later discussed in factor interpretation, distinguishing statements are statements placed at significantly different spots on the grid for any two factors. The software (Schmolck) selects distinguishing statements (i.e., significant at 95% level or higher) for each factor based upon the standard error of differences between sorts and provides the rank and z-score for each statement.

Factor Interpretation. The purpose of the final step in factor analysis, factor interpretation, is to provide a holistic explanation of the viewpoints participants in the study hold about PL for SETs, depending on whether they are a SET or PLP (Watts & Stenner, 2012). The items in the factor array are considered to represent a factor's overall perspective, and demographic information collected from participants can provide added information and clarity. It is important to remember that in Q methodology all the statements must fit somewhere into the

sorting distribution. Consequently, statements ranked at the lower end of the curve are viewed as less important (i.e., not unimportant or "negative") in comparison to the preceding ranked statements. Further, during the study and post-sort interviews, most participants noted difficulty of sorting due to the majority of the statements seeming important (i.e., positive).

As mentioned, interpretation of factors was based on distinguishing statements, or statements placed with a significantly different rank-order on a factor when compared to other factors (Tielen, van Staa, Jedeloo, van Exel, & Weimer, 2008). In particular, primary understanding of each identified factor is centered on the characterizing statements, which are distinguishing statements at the extreme ends of the factors (i.e., ranked -5, -4, +5, and +4; Tielen et al.). The analysis of the rest of the more neutral distinguishing statements (i.e., less extreme positions of -3, -2, -1, 0, 1, 2, 3) provide additional nuanced information to more clearly define the factor (Tielen et al.). The background information and follow-up interviews (Øverland et al., 2012) further support and specify factor interpretation and can add to the overall understanding of the emergent factors. Based on factor interpretation, the researcher designates a name to accompany the interpretation of each factor and a discussion of the factor's meaning. These names are not meant to be all-inclusive as they do not, and cannot, simplistically capture the different perceptions of all the participants that defined the factor. Finally, discussion about the consensus statements (i.e., agreement across factors), which are statements that are indistinguishable between any pair of factors (van Exel & de Graaf, 2005), can also help the factor interpretation and description.

Consumers' Results

Consumers' Correlation Matrix. Using PQmethod 2.11 software (Schmolck, 2002), correlations among Consumers' viewpoints were calculated using the correlation statistic r. An

18 by 18 matrix was created where the number of individuals is 18 (n = 18). The correlation matrix (see Appendix E, Table E1) depicts the extent to which Consumers sorted the statements similarly (McKeown & Thomas, 1988). For example, the high correlation (r = .64) between the 8th and 16th sorts indicates those Consumers share a similar perspective of SETs' PL since they arranged the statements similarly. The zero correlation between the 9th and 17th sorts indicates a lack of similarity between statement placements, suggesting the absence of a shared perspective of PL for SETs.

Consumers' Factor Analysis. Centroid factor analysis was performed using the PQMethod 2.11 software program (Schmolck, 2002) and the unrotated factor loading revealed eight factors (see Appendix E, Table E2). The initial eight unrotated factors explained 80% of the total variance. These factors were first limited using Kaiser-Guttman Criterion and of the eight factors, five factors had eigenvalues greater than 1. Three additional parameters were used to help determine the number of factors to rotate. Given the significant factor loading value previously calculated to be 0.38, Factors 1, 2, 3, and 4 met the criteria of having two or more significant loadings. According to Humphrey's rule, a check of the cross-products of the absolute value of the two highest loadings (i.e., ignoring a negative or positive sign) for Factors 1 through 4 (i.e., Factors with two or more significant loadings) revealed Factors 1, 2, and 3 satisfied the criterion, with the cross-product of Factor 4 being less than twice the standard error (i.e., 0.30). Finally, Factors 1, 2, and 3 accounted for 53% of the explained variance (prior to rotation), which is more than Kline's (1994) recommendation of the factors selected accounting for 35-40% or more of the total amount of explained variance or Brown's (1980) recommendation of the factors selected accounting for at least 50% of the total amount of explained variance. Based on the data, a three factor solution was chosen. A preliminary

Varimax rotation confirmed the choice of three factors based on Humphrey's Rule since including the fourth factor only increased the explained variance by 7% and had only two sorts solely loaded on it.

Before rotating the three selected factors, factor scores that were +/- 0.38 (i.e., calculated significant loading at $p < .01$) were manually flagged in PQMethod 2.11 (Schmolck 2002) for inclusion among the rotation. Next, a varimax rotation was conducted on the three chosen factors to help provide clarity regarding why the identified Q sorts were associated with the factors. As mentioned, factor loading is significant at the $p < .01$ level when the factor scores exceed +/- .38.

After rotation, the factor reliability table (Appendix E, Table E3) was reviewed. Each of the three factors had five or more views associated with it exceeding both the modest recommendation of at least two factors (Brown, 1980) and the more stringent recommendation of four factors (Dennis, 1986). Further, the composite reliability for each factor was in excess of 95%, far exceeding the 80% expectation. Further, values for standard errors for differences between the normalized factor scores were adequate (i.e., between -0.5 and 0.5) to confirm additional reliability to the findings, indicating there is a significant difference between the three identified factors.

When examining the correlations between the three factors (see Appendix E, Table E4), all factors were positively correlated, revealing some connection and overlap between the factors. As mentioned, positive and high correlations between factors (i.e., greater than 0.5) indicate a potential of participants' perceptions aligning with elements of both factors. It is not uncommon for there to be shared loading and this positive relationship indicates the potential for a more nuanced description of each factor (Eysenck, Mogg, May, Richards & Mathews, 1991).

It is the role of the researcher to identify the distinctions to help differentiate the factors and explain the existing overlap.

The correlation between Factor 1 and 2 (r = 0.51) indicates the participants who loaded on these two factors share several similar perspectives. There were two participants who loaded significantly on both Factors 1 and 2. The correlation between Factors 1 and 3 (r = 0.41) indicated some level of relation between these factors, with three participants loading significantly on both factors. Finally, the correlation between Factors 2 and 3 (r = 0.32) was less than the relationship between the other two factors, implying the perspectives were more unique, with only one participant loaded on both Factors 2 and 3. The factor interpretation section includes further discussion regarding the relationship between the participants who loaded on multiple factors.

See Table E5 (Appendix E, Table E5) for the three rotated factor matrix with indications of the Q sorts that loaded on each factor. After rotation, every Consumer participant loaded significantly (i.e., $p > 0.01$) on at least one factor and 6 participants loaded on two factors. As mentioned, when participants load on more than one factor, it indicates they partially favored each of the factor viewpoints their sort loaded on, with emphasis on the factor where the loading was statistically higher (Brown, 1980). Factor analysis detected the following three factors describing the Consumers' perceptions of how they perceive the role of professional development: Factor 1 (Practice Improvers), Factor 2 (Time-Valuers), and Factor 3 (Immediate Appliers).

Consumers' Factor 1: Practice Improvers. Factor 1, Practice Improvers, explained more variance (33%) than any other identified factor. Ten participants (Appendix E, Table E6) significantly loaded on Factor 1, all of them positively; however, half of them (i.e., 5) loaded on

other factors as well. Factor 1 had 16 distinguishing statements at a confidence level of 95% ($p < 0.05$). The statement ranking values skewed slightly positively (9 positive, 1 neutral, 6 negative), indicating participants more positively associated their perceptions of the factor. Table 3 lists Factor 1's distinguishing and characterizing statements.

Table 3

Consumers: Distinguishing and Characterizing Statements for Factor 1, Practice Improvers

No.	Statement (Abbreviated)	Rank	Score
40^	Includes learning specific interventions to use with struggling students.	5	1.61
41^	Includes school leaders cultivating a positive culture and collaborative relationships between general and special education teachers.	4	1.57
17^	Includes planning the PL program based on students' needs (e.g., grades, classwork, discipline, standardized assessments, etc.).	4	1.46
16	Includes participants problem-solving classroom issues in a structured format (e.g., data analysis, planning intervention, implementation, and evaluation).	3	1.42
32	Includes making ongoing adjustments throughout the PL program using a variety of data (e.g., participants' reactions, learning, and implementation and student outcomes).	3	1.31
5	Includes active learning experiences with practice and feedback.	2	0.95
37	Includes assessing the overall effectiveness of the PL program using a variety of data (e.g., participants' reactions, learning, implementation, and student outcomes).	2	0.82
36	Includes school leaders participating in the PL program with other staff members (e.g., teachers, coaches, etc.).	1	0.56
10	Includes modeling, demonstrations, and video of the new information and skills.	1	0.22
7	Includes adequate time to participate in the PL program.	0	-0.09
45	Includes adequate time to implement the PL program.	-1	-0.28
27	Includes being modified to meet the unique characteristics of the school/district (e.g., procedures, leadership, resources, etc.).	-1	-0.58
6	Includes opportunities for collaboration amongst the participants.	-2	-0.60
18	Includes participants who listen and respectfully communicate with each other.	-2	-0.77
39	Includes participants who are motivated to change instructional practices.	-3	-1.27
20^	Includes participants choosing whether they want to participate in the PL program (i.e., without pressure or consequence for choice).	-4	-1.63

Note. Caret (^) indicates Characterizing statements

Factor 1, Practice Improvers, were primarily defined by wanting PL that provided long term solutions to both address student needs and improve their instructional effectiveness. These Consumers valued administration support for collaboration between SETs and GETs. While they were only marginally concerned with how the PL was presented, they did want it to focus on content, leadership, and data (i.e., student and PL program) since their primary focus was to improve their teaching practice.

These Consumers were most interested in PL being based on current student needs, not broad school or district needs (statements 17 and 27); learning specific interventions to directly apply to classroom concerns (statement 40), and problem-solving SETs' own classroom issues in a structured and data-based format (statement 16). Given their desire for the PL program to be immediately applicable to their classrooms, it was important to them that PL have formative assessments to support ongoing modifications to meet their fluid needs throughout the training (statement 32). While they valued PL program design attributes like active learning as well as modeling, demonstrations, and video (statements 5 and 10), they wanted these elements to support the overarching emphasis of learning directly applicable and specific skills to use in their classrooms. Further, characteristics of the participants (i.e., motivated and respectful; statements 39 and 18) and availability of PL resources (i.e., time; statements 7 and 45) appeared less important to these Consumers when they considered PL.

Factor 1 loading Consumers were least interested in whether or not PL was optional (statement 20). Since these Consumers were focused on improving their teaching practice, they wanted full participation, including that of school/district leaders (statement 36). Similarly, Factor 1 loading Consumers also wanted administrators to encourage a collaborative relationship between SETs and GETs (statement 41). These participants strongly felt SETs needed

administration support for successful partnerships with GETs to most effectively implement and sustain the PL content and serve SWDs. Being most interested in improving their teaching practice in a way that directly related to their classroom needs, such as collaboration with GETs, they were less concerned about SETs working with each other during the PL program (statement 6). This preference is most likely based on personal experience as the majority of the participants who loaded on Factor 1 spent their days working with GETs either co-teaching or supporting students who also spend time in the general education setting (i.e., resource; see Appendix E, Table E6).

Consumers' Factor 2: Time Valuers. Factor 2, Time Valuers, accounted for the second highest variance (11%) of the identified factors. Nine participants (Appendix E, Table E7) significantly and positively loaded on Factor 2, with one third of them (i.e., 3) also loading on Factors 1 or 3. There were 23 distinguishing statements associated with Factor 2 at a confidence level of 95% ($p < 0.05$). The values of the Factor 2 rankings of the statements skewed slightly positively (i.e., 11 positive, 3 neutral, 9 negative), indicating participants somewhat more positively associated with their perceptions of the factor. Table 4 lists the distinguishing and characterizing statements associated with Factor 2, Time Valuers.

Table 4

Consumers: Distinguishing and Characterizing Statements for Factor 2 Time Valuers

No.	Statement (Abbreviated)	Rank	Score
45^	Includes adequate time to implement the PL program.	5	1.77
6^	Includes opportunities for collaboration amongst the participants.	5	1.70
41	Includes school leaders cultivating a positive culture and collaborative relationships between general and special education teachers.	3	1.10
40	Includes learning specific interventions to use with struggling students.	3	1.09
7	Includes adequate time to participate in the PL program.	2	0.85
29	Includes all PL provider(s) having good communication and relationship skills.	2	0.78
17	Includes planning the PL program based on students' needs (e.g., grades, classwork, discipline, standardized assessments, etc.).	2	0.57
32	Includes making ongoing adjustments throughout the PL program using a variety of data (e.g., participants' reactions, learning, and implementation and student outcomes).	1	0.51
5	Includes active learning experiences with practice and feedback.	1	0.44
2	Includes positive relationships between the participants and PL provider(s).	1	0.41
21	Includes promoting a culture of collective responsibility, where all participants are responsible for the success of the PL program.	1	0.33
26	Includes building a professional network among participants to help support and sustain new practices.	0	0.23
37	Includes assessing the overall effectiveness of the PL program using a variety of data (e.g., participants' reactions, learning, implementation, and student outcomes).	0	0.11
36	Includes school leaders participating in the PL program with other staff members (e.g., teachers, coaches, etc.).	0	0.05
43	Includes learning how to identify students' needs and then monitor progress.	-1	-0.07
27	Includes being modified to meet the unique characteristics of the school/district (e.g., procedures, leadership, resources, etc.).	-1	-0.13
34	Includes learning how to align instruction and interventions with curriculum standards and statewide assessments.	-1	-0.14
12	Includes technology to deliver information, ease networking and communication, and enhance classroom instruction.	-1	-0.31
20	Includes participants choosing whether they want to participate in the PL program (i.e., without pressure or consequence for choice).	-2	-0.52
13	Includes observing and providing constructive feedback to other participants.	-2	-1.05
33	Includes being aligned with teacher performance standards (e.g., licensing standards, evaluations, etc.).	-3	-1.19
44	Includes learning subject-matter content.	-3	-1.24
11^	Includes teachers meeting regularly (e.g., weekly, bi-weekly, etc.).	-4	-1.79

Note. Caret (^) indicates Characterizing statements

Factor 2, Time Valuers, primarily highly regarded time as a resource, specifically related to training content and collaboration. These participants desired efficient use of PL training time to address participants' needs and interests. These Factor 2 Consumers' perceptions were influenced by their classroom settings and previous PL experiences.

Factor 2 Consumers were most interested in making sure there was adequate time for SETs to learn the content and implement it in their classrooms (statements 45 and 7) without the obligation to a fixed schedule of routine meetings (statement 11). Wanting the training to be an efficient use of SETs' time, these Consumers desired PL programs with specific and applicable interventions based on student needs (statement 40 and 17). Further, they saw some value in ongoing adjustment of the PL based on formative assessment data during the training (statement 32), which supports their interest in effective training that is adapted to the needs of SET learners. Being less associated with SETs' (i.e., their own) immediate classroom needs, they were least interested in spending time learning general subject-matter (statement 44) or making sure the PL content was aligned with teaching performance standards (statement 33). Similarly, these Consumers were less interested in the training being modified to the characteristics of the school/district (statement27) or learning to align instruction with the curriculum standards or statewide assessments (statement 34), identify student needs and monitor progress (statement 43), or use technology (statement 12). Given the majority of these Consumers participated in a significant number and hours of PL the previous year (see Appendix E, Table E7), not only did they not think training should be optional (statement 20), they also knew what aspects of PL were worth SETs' time, being primarily interested in PL content that was quickly applicable to SETs and their SWDs' needs.

Perceiving collaboration as an efficient use of SETs' time, Factor 2 Consumers who spent their days teaming with GETs (i.e., majority were co-teachers or taught in resource setting), positively ranked several aspects of collaboration within PL. They desired leadership to cultivate a positive culture and collaborative relationships between SETs and GETs (statement 41). Further, they were very interested in SETs collaborating with the other participants as well as indicated some value positive relationships with the PLPs (statements 6, 29, and 2). At the same time, they were not as interested in SETs implementing the PL content and critiquing or being critiqued by their peers (statement 13), suggesting their desire for a positive relationship between SETs built on sharing knowledge and best practices as opposed to supervising or evaluating each other.

The two participants (2013THA and 2010FIT) who loaded on Factor 1, Practice Improvers, and Factor 2, Time Valuers, were very similar in training and experience. While from different areas of the state, both were women with at least a Master's degree, currently co-taught in middle/high school classrooms and had 0 to 4 years of experience in their current position and 6 years of experience overall. This demographic similarity suggested the co-loading on Factors 1 and 2 could have resulted from similar classroom experiences.

Factor 3: Immediate Appliers. Factor 3, Immediate Appliers, accounted for the third highest variance (9%) of the identified factors. Five participants (Appendix E, Table E8) significantly loaded on Factor 3, four of them positively who also loaded on another factor (i.e., Factor 1 or Factor 2). The only participant to load solely on Factor 3 also loaded negatively. There were 21 distinguishing statements associated with Factor 3 at a confidence level of 95% ($p < 0.05$). The values of the rankings of the statements skewed slightly negative (8 positive, 1 neutral, 12 negative), indicating participants more negatively associated with their perceptions of

the factor. Table 5 lists the distinguishing and characterizing statements associated with Factor 3, Immediate Appliers.

Table 5

Consumers: Distinguishing and Characterizing Statements for Factor 3, Immediate Appliers

No.	Statement (Abbreviated)	Rank	Score
40^	Includes learning specific interventions to use with struggling students.	5	2.52
5^	Includes active learning experiences with practice and feedback.	5	2.00
3^	Includes participants implementing the new practices in their own school/classroom.	4	1.33
20	Includes participants choosing whether they want to participate in the PL program (i.e., without pressure or consequence for choice).	3	0.96
30	Includes frequent sessions.	2	0.74
45	Includes adequate time to implement the PL program.	1	0.46
6	Includes opportunities for collaboration amongst the participants.	1	0.39
9	Includes school/district leaders providing the necessary resources (e.g., time, staff, materials, etc.) for the PL program and implementation.	1	0.30
22	Includes planning the PL program based on teachers' needs (e.g., needs assessment, evaluations, goals, etc.).	0	-0.03
24	Includes all PL providers having a high level of expertise on the topic.	-1	-0.27
41	Includes school leaders cultivating a positive culture and collaborative relationships between general and special education teachers.	-1	-0.33
14	Includes person(s) as PL provider(s) from outside the school district.	-1	-0.39
17	Includes planning the PL program based on students' needs (e.g., grades, classwork, discipline, standardized assessments, etc.).	-1	-0.54
32	Includes making ongoing adjustments throughout the PL program using a variety of data (e.g., participants' reactions, learning, and implementation and student outcomes).	-2	-0.57
37	Includes assessing the overall effectiveness of the PL program using a variety of data (e.g., participants' reactions, learning, implementation, and student outcomes).	-2	-0.61
7	Includes adequate time to participate in the PL program.	-2	-0.64
25	Includes occurring over an extended period of time.	-2	-0.79
36	Includes school leaders participating in the PL program with other staff members (e.g., teachers, coaches, etc.).	-3	-0.97
42^	Includes opportunities for participants to reflect on their practice (e.g., through group discussion, portfolios, etc.).	-4	-1.68
27^	Includes being modified to meet the unique characteristics of the school/district (e.g., procedures, leadership, resources, etc.).	-4	-1.68
31^	Includes opportunities and training for participants to serve in leadership roles (e.g., train the trainer).	-5	-2.46

Note. Caret (^) indicates Characterizing statements

Factor 3, Immediate Appliers, emphasized the desire for instant applicability of the PL content. Consequently, they were less interested in SETs spending additional time on elements of PL programs not directly related to their current classroom needs. These Consumers focused on SETs getting what they needed from the PL program to immediately support their SWDs' and classroom needs and not on a long-term training commitment.

Supporting the theme of immediate practicality, these Consumers were most interested in SETs learning content and interventions to use with their SWDs (statement 40), actively practicing what they learned during the training (statement 5), and applying the new content in their classrooms (i.e., implementation; statement 3). Further, they were only somewhat interested in ensuring leadership provided necessary resources to learn the PL content (statement 9) and much less concerned about leadership participating in the PL program (statement 36). These Consumers were least interested in PL being designed primarily to meet the goals of the district or school (statement 27), extending trainings to future leadership opportunities (statement 31), spending time reflecting on their PL experiences (statement 42), and assessing the effectiveness of the PL program (statement 37), indicating they did not perceive these elements as addressing the primary objective of SETs receiving knowledge and skills to apply to their classroom.

These SETs were time conscious as they desired SET PL to primarily help SETs learn content to immediately use in their classrooms. This perception was supported by their desire for SETs to have a choice of attending the PL training (statement 20). Further, these Consumers were interested in frequent sessions (statement 30), which were not over an extended period of time (statement 25), and adequate time to implement the content (statement 45). These Consumers were focused on the immediate applicability to the classroom and not on a long-term

training commitment. Given these SETs overall participated in a substantial amount of PL programs and hours the previous year (see Appendix E, Table E8), their previous PL experiences most likely influenced their opinion of what elements of PL support the immediate applicability of PL content without a long-term commitment.

One participant (1993THR) loaded on Factors 2 and 3. This participant is an educational specialist and had been in education for 15 to 19 years and in her current role as well as in special education for 10 to 14 years. Further, the previous year, she participated in six or more PL programs and 20 or more PL hours. With her extensive experience, she seemed to value time and the usefulness of PL programs' content. She wanted applicable PL content in efficient manner.

Three participants (2012BAR, 1996LEY, and 2006WIL) loaded on Factors 1 and 3. Their demographics and experiences indicated very little overlap between the three of them. Specifically, while two were novice females, one was an experienced male. None of them was the same age. Although they all had 0 to 4 years of experience in their current position, two were co-teaching and one was self-contained and they had different levels of PL programs and hours received the previous year. With the information known, it is difficult to determine a common theme of these three participants; future in-depth interviews about their PL experiences may provide additional information regarding their overlapping perspective.

Consumers' Consensus Statements. Participant consensus statements indicate perceptions shared across all factors, although the statements do not necessarily mean the same thing to participants who loaded on different factors. Consensus statements can reveal common ground, suggest ambiguous interpretations of ideas or themes, or indicate taboo topics

participants want to ignore (Zabala & Pascual, 2016). Considering these statements can help add additional depth to understanding the sorts. Table 6 displays Consumers' consensus statements.

Table 6

Consumers' Consensus Statements

		Factor					
		1		2		3	
No.	Statement	Rank	Score	Rank	Score	Rank	Score
1*	Includes participants from the same school and/or who teach the same grade or subject.	-2	-0.70	-2	-0.68	-3	-0.88
8*	Includes sustained follow-up and support (e.g., coaching, booster-sessions, etc.) to help implement new practices in the school/classroom.	2	0.96	2	0.70	3	1.10
15*	Includes working with participants' actual student data and lesson plans to practice the new information and skills.	2	0.94	3	0.95	2	0.88
23	Includes PL content that is consistent with school/district standards, goals and other initiatives.	-1	-0.24	-2	-0.66	0	-0.06
25	Includes occurring over an extended period of time.	-4	-1.42	-4	-1.40	-2	-0.79
28*	Includes building on participants' prior experiences, beliefs, and knowledge.	-1	-0.32	-2	-0.65	0	-0.10
35	Includes learning how students learn that content.	1	0.26	0	-0.01	1	0.46
38*	Includes being research-based with evidence linking practices to student learning.	0	0.16	0	-0.02	1	0.57

Note. P < . 05; asterisk (*) indicates significance at p < .01. Both the factor Q-Sort value and the normalized score are shown.

Regarding PL design, Consumers agreed they did not want the PL program implemented over an extended time period (statement 25), suggesting Consumers, regardless of the factor(s) upon which they loaded, were interested in succinct training as opposed to long-term instruction. However, these participants all valued sustained follow-up and support for implementation of the PL content (statement 8), suggesting while they are not interested in long-term PL programs, they did want to be able to call on the PLPs with questions once they began to apply the new knowledge and skills in their classrooms. Regarding the specifics of the PL program implementation, Consumers wanted to work with actual student data and lesson plans to practice the PL content (statement 15), presumably so they could leave training with directly applicable skills. They also agreed the PL for SETs did not necessarily have to include a particular makeup of participants; participants could come from outside the school and/or teach different types of students/classrooms (statements 1).

Providers' Results

Providers' Correlation Matrix. A similar factor analysis was performed using PQMethod 2.20 software (Schmolck, 2011) for the Providers. Using the PQMethod software (Schmolck), correlations among the Providers' viewpoints were calculated using the correlation statistic r. A 17 by 17 matrix (see Appendix F, Table F1) was created where the number of individuals is 17 (n = 17). The correlation matrix provided depicts the extent to which the participating Providers sorted the statements similarly (McKeown & Thomas, 1988). The large correlation (r = .87) between the 16th and 17th sorts indicates these Providers share a similar perspective of SETs' PL as they arranged the statements similarly. The correlation close to zero (r= .12) between the 1st and 16th sorts indicates a lack of similarity between their placements, suggesting the absence of a shared perspective of PL for these Providers.

Providers' Factor Analysis. Centroid factor analysis was performed by the PQMethod 2.11 software program (Schmolck, 2002) and the unrotated factor loading matrixed revealed eight factors (see Appendix F, Table F2). The initial eight unrotated factors explained 86% of the total variance. These factors were first limited using Kaiser-Guttman Criterion and of the eight factors, three factors had eigenvalues greater than 1. Three additional parameters were used to help determine the number of factors to rotate. Given the significant factor loading value previously calculated to be 0.38, Factors 1, 2, and 3 met the criteria of having two or more significant loadings. According to Humphrey's rule, a check of the cross-products of the two highest loadings (i.e., ignoring the sign) for Factors 1 through 3 (i.e., Factors with two or more significant loadings) revealed Factors 1 and 2 satisfied the criterion, with Factor's 3 cross-product being less than twice the standard error (i.e., 0.30). Finally, Factors 1 and 2 accounted for 57% of the explained variance (prior to rotation), which is more than Kline's (1994) recommendation of the factors selected accounting for 35-40% or more of the total amount of explained variance or Brown's (1980) recommendation of the factors selected accounting for at least 50% of the total amount of explained variance.

While some of the data (Humphrey's Rule) suggested a two factor solution, a preliminary Varimax rotation revealed that the results were not viable as there were no distinguishing statement(s) for either factor when a two factor solution was run. There is generally more consensus between only two parties than between three or more parties. The consensus criterion in PQMethod requires that there is no dispute between any pair, and the number of pairings increase proportionally with the number of groups. For example, when rotating only two factors, the statements that distinguished Factor 1 from Factor 2 were the same ones as those that distinguished Factor 2 from Factor 1, just in the opposite direction. Consequently, a two factor

solution was unacceptable for this study and a three factor solution, which was also supported by the data and accounted for 64% of the total explained variance was an appropriate solution.

Before rotating the three selected factors (i.e., now referred to as Factors A, B, and C to distinguish from SETs' factors), factor scores that were +/- 0.38 (i.e., previously calculated significant loading) were manually flagged in PQMethod 2.11 (Schmolck 2002) for inclusion. Next, a varimax rotation was conducted on the three chosen factors to help provide clarity regarding why the identified Q sorts were associated with the factors. As mentioned, factor loading is significant at the $p < .01$ level when the factor scores exceed +/- .38.

After rotation, the factor reliability table (Appendix F, Table F3) was reviewed. Each of the three factors had five or more views associated with it exceeding both the modest recommendation of at least two factors (Brown, 1980) and the more stringent recommendation of four factors (Dennis, 1986). Further, the composite reliability for each factor was in excess of 96%, far exceeding the 80% expectation. Further, values for standard errors for differences between the normalized factor scores were adequate (i.e., between -0.5 and 0.5) to confirm additional reliability to the findings, indicating there is a significant difference between the three identified factors.

When examining the correlation between the three factors (see Appendix F, Table F4), all factors were positively correlated, revealing significant positive overlap between the factors. As mentioned, positive and high correlations between factors (i.e., greater than 0.5) indicate a potential of participant's perceptions aligning with elements of both factors. Given the correlations between all three factors is greater than 0.5, it is assumed there will be shared loading since individual points of view tend to be nuanced and can rest on personal definitions and biases related to specific word choices in statements (Eysenck et al., 1991). The factor

interpretation section includes further discussion regarding the relationship between the participants who loaded on multiple factors.

The correlation between Factor A and B (r = 0.54) indicates the participants who loaded on these two factors share several similar perspectives. There was one participant who loaded significantly on both Factors A and B. The correlation between Factors A and C (r = 0.63) indicated even more relation between these factors, with one participant loading significantly on both factors. Finally, the correlation between Factors B and C (r = 0.71) was more than the relationship between the other two factors, implying the perspectives were more similar, with two participants loading on both Factors B and C. Further, given each of the positive correlations between each of the factors, it is not surprising that one participant loaded on all three factors. Overall, there is a positive relationship between all three factors, suggesting the connection between the factors is positive and significant. Again, this positive relationship between factors indicates the potential for a more nuanced description of each factor. As discussed, the correlation between the factors suggested overlap between the factors and it is the role of the researcher to identify the nuances to help differentiate the factors and explain the existing overlap.

See Table F5 (Appendix F, Table F5) for the three rotated factor matrix with indications of the Q sorts that loaded on each factor. After rotation, every Provider loaded on at least one factor, with one participant loading on all three and four participants, loaded on two factors. When participants load on more than one factor, it indicates they partially favored each of the factor viewpoints their sort loaded on, with emphasis on the factor where the loading was statistically higher (S. Brown, 1980). As discussed, the correlation between the factors suggested some overlap between the factors and it is the role of the researcher to identify the

nuance to help differentiate the factors and explain the existing overlap. Factor analysis detected the following three factors describing the Providers' perceptions of how they perceive the role of professional development: Factor A (School/District Aligners), Factor B (Data Driven Professionals), and Factor C (Leadership Encouragers).

Providers' Factor A: School/District Aligners. Factor A, School/District Aligners, accounted the most variance (47%) in Providers' Q sorts. Six participants (see Appendix F, Table F6) significantly loaded on Factor A, all of them positively. This was the smallest number of participants for the three identified factors. It should be noted in Q methodology, the importance in assigning value to factors is the amount of variance it represents as opposed to the number of participants who load on a particular factor (Valenta & Wigger, 1997). Half of Factor A participants also loaded onto another factor. There were 15 distinguishing statements associated with Factor A at a confidence level of 95% ($p < 0.05$). The values of the rankings of the statements were balanced between negative and positive (7 positive, 1 neutral, 7 negative); however, two positive characterizing statements (i.e., ranked +5) most informed the structure and several moderately weighted negative statements (i.e., ranked -3) helped define it. Table 7 lists the distinguishing and characterizing statements associated with Factor A, School/District Aligners.

Table 7

Providers: Distinguishing and Characterizing Statements for Factor A, School/District Aligners

No.	Statement (Abbreviated)	Rank	Score
9^	Includes school/district leaders providing the necessary resources (e.g., time, staff, materials, etc.) for the PL program and implementation.	5	2.00
27^	Includes being modified to meet the unique characteristics of the school/district (e.g., procedures, leadership, resources, etc.).	5	1.75
4	Includes school/district leaders aligning calendars, schedules, and structures to support the PL program.	3	1.27
7	Includes adequate time to participate in the PL program.	2	0.91
1	Includes participants from the same school and/or who teach the same grade or subject.	1	0.38
24	Includes all PL providers having a high level of expertise on the topic.	1	0.16
38	Includes being research-based with evidence linking practices to student learning.	1	0.16
31	Includes opportunities and training for participants to serve in leadership roles (e.g., train the trainer).	0	-0.20
40	Includes learning specific interventions to use with struggling students.	-1	-0.26
13	Includes observing and providing constructive feedback to other participants.	-2	-0.85
41	Includes school leaders cultivating a positive culture and collaborative relationships between general and special education teachers.	-2	-0.90
35	Includes learning how students learn that content.	-3	-0.91
37	Includes assessing the overall effectiveness of the PL program using a variety of data (e.g., participants' reactions, learning, implementation, and student outcomes).	-3	-1.02
34	Includes learning how to align instruction and interventions with curriculum standards and statewide assessments.	-3	-1.05
43	Includes learning how to identify students' needs and then monitor progress.	-3	-1.18

Note. Caret (^) indicates Characterizing statements

Factor A, School/District Aligners, emphasized the importance of the PL program being congruent with and supported by the SET participants' school(s) and district(s). For these Providers, adequate resources and alignment with the school/district characteristics was more important than the content or the learning design of the PL programs. Overall, these Providers stressed the importance of SETs' PL being applicable to and immersed in the school/district where they were embedded.

For SETs to successfully implement the content from PL programs, Factor A loading Providers perceived it most important that school/district leaders guarantee the necessary resources for the PL (statement 9), such as staff, materials, and time. Also, these Providers were most interested in the PL program for SETs being modified to meet the unique characteristics of the school or district (e.g., procedures, leadership, etc.; statement 27). They wanted leadership to ensure organizational systems and structures, such as calendars and schedules, support SETs' PL (statement 4), which included adequate time for SETs to participate (statement 7). To be successful, according to Factor A Providers, PL programs for SETs must be coordinated with and supported by the school systems they are embedded.

Several of the negatively ranked statements further supported the notion that these Providers were more interested in aligning the PL program for SETs to the school/district than with the content or implementation of the program. For example, they were not as concerned with the PL program addressing student learning outcomes, such as learning how to identify students' needs and monitor progress or aligning instruction and interventions with curriculum standards and statewide assessments (statements 43, 34, and 35). Similarly, they did not think supporting implementation by having the SET participants observe and provide constructive feedback to each other (statement 13) was as important. These Providers did not recognize the advantage summative assessment of the PL program (statement 37) for SETs implementing the PL content, as they most likely felt the alignment with the school/district determined the overall effectiveness. This primary focus on the PL program being applicable to the participants' school/district also resulted in rank leadership fostering a relationship between general and special education instructors (statement 41) as less important.

Providers Factor B: Data Driven Professionals. Factor B, Data Driven Professionals, represented the second most (10%) variance in Providers' identified factors. Nine participants (see Appendix F, Table F7) all positively significantly loaded on Factor B, with four participants also loading on other factors. There were 14 distinguishing statements associated with Factor B at a confidence level of 95% ($p < 0.05$). The values of the Factor B rankings of the statements skewed slightly negatively (5 positive, 1 neutral, 8 negative), indicating participants more negatively associated with their perceptions of the factor. Table 8 lists the distinguishing and characterizing statements associated with Factor B, Data Driven Professionals.

Table 8

Providers: Distinguishing and Characterizing Statements for Factor B, Data Driven Professionals

No.	Statement (Abbreviated)	Rank	Score
32^	Includes making ongoing adjustments throughout the PL program using a variety of data (e.g., participants' reactions, learning, and implementation and student outcomes).	5	1.58
43^	Includes learning how to identify students' needs and then monitor progress.	4	1.30
24	Includes all PL providers having a high level of expertise on the topic.	3	1.00
34	Includes learning how to align instruction and interventions with curriculum standards and statewide assessments.	2	0.84
15	Includes working with participants' actual student data and lesson plans to practice the new information and skills.	1	0.72
13	Includes observing and providing constructive feedback to other participants.	0	0.04
44	Includes learning subject-matter content.	-1	-0.12
28	Includes building on participants' prior experiences, beliefs, and knowledge.	-1	-0.21
2	Includes positive relationships between the participants and PL provider(s).	-1	-0.29
26	Includes building a professional network among participants to help support and sustain new practices.	-1	-0.41
1	Includes participants from the same school and/or who teach the same grade or subject.	-3	-1.42
30	Includes frequent sessions.	-3	-1.48
11	Includes teachers meeting regularly (e.g., weekly, bi-weekly, etc.).	-3	-1.54
21^	Includes promoting a culture of collective responsibility, where all participants are responsible for the success of the PL program.	-4	-1.54

Note. Caret (^) indicates Characterizing statements

Factor B, Data Driven Professionals, valued data, especially in order to continuously modify the PL program. They were also very interested in presenting PL to help SETs learn how to effectively use data with their students. These Providers thought it was valuable that the PLPs have a high level of expertise. They did not perceive fostering collaborative relationships between the SET participants was a key element to successful PL.

In valuing the use of data, Factor B Providers indicated they most strongly believed it is important to continuously adjust the PL based on data of the participants' needs and performance

(statement 32). These Providers also were highly interested in helping SETs learn to use data to identify student needs and monitor progress (statement 43). They appreciated the use of data to support improved student learning outcomes and wanted PLPs to share this information with SETs.

Given these Providers' high levels of education and experience, it is not surprising they perceived value in having trainers with expertise on the PL topic (statement 24). They believed PLPs' skills, such as data and content knowledge, are very important to SETs successfully implementing the content from their PL experiences. Perhaps because of their belief that expert PLPs are integral to SETs' PL, Factor B Providers were not as interested in participants collaborating or creating a culture of collective responsibility (statement 21). Similarly, they did not see as much value in the participants building a community by meeting regularly or frequently (statements 11 and 30), being from the same school and/or teaching the same grade/subject (i.e., to establish learning communities), or creating a professional network with other participants to help support and sustain the PL practices (statements 1 and 26). These perceptions are consistent with their belief that it is not the SET participants who are responsible for the success of the training program but, rather, the PLPs.

Participant 2000JAC, who loaded on Factors A and B, shared similar characteristics with participants who loaded on both factors in terms of gender (female), education (Master's), time in position (5-9 years), and number of PL hours provided the previous school year (6 to10). With only one participant, it is difficult to identify a common theme. Future in-depth interviews about her PL experiences may provide additional information regarding their overlapping perspective.

Factor C: Leadership Encouragers. Factor C, Leadership Encouragers, explained the third most amount of variance (7%) in the identified factors. Eight participants (see Appendix F,

Table F8), significantly loaded on Factor C, all of them positively. Half of the participants loading on other factors is in keeping with the tightly clustered relationships between the three identified factors and highlights the importance of considering nuance within each factor. There were 10 distinguishing statements associated with Factor C at a confidence level of 95% ($p < 0.05$). The values of the rankings of the statements skewed slightly negative (4 positive, 1 neutral, 5 negative). Factor C contains two characterizing statements ranked as 5 (i.e., one +5 and one -5) that were primary in defining the factor. Table 9 lists the distinguishing and characterizing statements associated with Factor C, Leadership Encouragers.

Table 9

Providers: Distinguishing and Characterizing Statements for Factor C, Leadership Encouragers

No.	Statement (Abbreviated)	Rank	Score
36^	Includes school leaders participating in the PL program with other staff members (e.g., teachers, coaches, etc.).	5	1.66
13	Includes observing and providing constructive feedback to other participants.	2	0.94
43	Includes learning how to identify students' needs and then monitor progress.	2	0.44
22	Includes planning the PL program based on teachers' needs (e.g., needs assessment, evaluations, goals, etc.).	1	0.33
34	Includes learning how to align instruction and interventions with curriculum standards and statewide assessments.	0	0.12
1	Includes participants from the same school and/or who teach the same grade or subject.	-1	-0.34
24	Includes all PL providers having a high level of expertise on the topic.	-1	-0.41
29	Includes all PL provider(s) having good communication and relationship skills.	-2	-0.45
12^	Includes technology to deliver information, ease networking and communication, and enhance classroom instruction.	-4	-1.51
19^	Includes person(s) as PL provider(s) from inside the school district.	-5	-2.35

Note. Caret (^) indicates Characterizing statements

Factor C, Leadership Encouragers, agreed the primary element needed for SETs to successfully implement the PL content in their school settings was leaderships' involvement in the PL program. Though perceived as less important than leadership participation in the PL,

these Providers did agree other aspects of the PL implementation and content were significant. In comparison, these Providers were least interested in SETs' PL including certain resources, such as the origination (i.e., inside or outside the district) of the PL providers and technology.

Factor C Providers perceived high value in school leaders, such as administrators and coaches, participating in the PL for SETs (statement 36). Leadership being closely involved in the SETs' PL program was primary for these Providers. Considerably after the priority of leadership involvement, these Providers agreed on certain aspects of the PL content being important. They perceived it was fairly important that the PL program provided SETs with opportunities to implement the content with observation and feedback (statement 13). Further, these Providers were somewhat interested in SETs learning how to identify student needs and monitor progress as well as aligning instruction and interventions with curriculum standards and statewide assessments (statements 43 and 34).

The characterizing negatively ranked statements highlighted these Providers' feeling that certain resources (i.e., technology and PLP characteristics) were not necessary for a successful SET PL program. In particular, they did not prioritize the resource of technology during PL to deliver the information, ease networking, and/or enhance instruction (statement 12). Further, these Providers were much less interested in particular characteristics the PLPs, which is a type of resource. They were not as concerned about whether the PLPs came from the inside the school district the SET PL occurred (statement 19). Regarding PLPs' characteristics, they thought it was not as important that PLPs have a good communication and relationship skills or a high level of topic-specific expertise (statements 29 and 24). Since all Factor C Providers had a high level of education and number and hours of training provided the previous year (i.e., in comparison to the other two factors; see Appendix F, Table F8), imaginably from experience,

they perceived the effectiveness of PLPs was not related to having specific subject-matter expertise or strong interpersonal skills or the origination of the provider.

Participant 1990TUC loaded on Factors A, School/District Aligners, and C, Leadership Encouragers. Her demographic data included having a bachelor's degree, 5 to 9 years in the current role, 5 to 9 years as a special education teacher, 15 to 19 years total in education, and involved in 1 PL program and 6 to 10 hours of PL instruction the previous school year. With only one participant, it is difficult to identify a common theme. An extended interview may shed additional light on aspects this participant identified with from both Factors.

Participants 1969BAL and 1972MAG loaded on Factors B, Data-Driven Professional, and C, Leadership Encouragers. Both women, they share similar ages (i.e., 55 years or older), amount of time as a SET before becoming a PLP (i.e., 20 or more years), and PL programs (i.e., 1) and PL hours (i.e., 6 to 10) provided the previous school year to SETs. The similarities of their demographics reinforced their overlapping views and suggested these participants share a perspective that is a consequence of perhaps their vast experiences as SETs and/or more limited PL program and hours administered the previous year (i.e., in comparison to many of their peers). An extended interview regarding their extensive time as SETs prior to becoming PLPs, as well as their long service in the educational field, may help explain why they both identified with Factors B and C.

Participant 1977WOL, who loaded on all three factors, is one of the most experienced Providers who participated in the study. With more than 20 years in her current role, and after providing six or more PL programs for over 21 hours in the last year, it is reasonable to consider she felt she could align with all three of the identified factors. It is possible these factors

represent a nuanced approach to her instruction that varies depending on the recipient audience or the subject matter.

Providers' Consensus Statements. As mentioned, participant consensus statements indicate perceptions shared across all factors, although the statements do not necessarily mean the same thing to participants who loaded on different factors. Consensus statements can reveal "common ground", suggest ambiguous interpretations of ideas or themes, or indicate taboo topics participants want to ignore (Zabala & Pascual, 2016). Considering these statements can help add additional depth to understanding the sorts. Table 10 displays Providers' consensus statements.

Table 10

Providers' Consensus Statements

		Factor					
		1		2		3	
No.	Statement	Rank	Score	Rank	Score	Rank	Score
5	Includes active learning experiences with practice and feedback.	2	1.19	1	0.80	4	1.32
6*	Includes opportunities for collaboration amongst the participants.	0	0.14	0	-1.02	-1	-0.10
8	Includes sustained follow-up and support (e.g., coaching, booster-sessions, etc.) to help implement new practices in the school/classroom.	4	1.44	5	1.65	5	2.06
10*	Includes modeling, demonstrations, and video of the new information and skills.	3	1.38	3	1.16	4	1.37
14	Includes person(s) as PL provider(s) from outside the school district.	-5	-1.98	-5	-2.33	-5	-2.52
15	Includes working with participants' actual student data and lesson plans to practice the new information and skills.	4	1.39	1	0.72	3	1.29
16	Includes participants problem-solving classroom issues in a structured format (e.g., data analysis, planning intervention, implementation, and evaluation).	0	-0.13	1	0.40	0	0.07
17*	Includes planning the PL program based on students' needs (e.g., grades, classwork, discipline, standardized assessments, etc.).	3	1.23	2	0.93	3	1.27
18	Includes participants who listen and respectfully communicate with each other.	0	-0.18	-2	-0.70	-2	-0.67
19	Includes person(s) as PL provider(s) from inside the school district.	-5	-1.71	-5	-1.84	-5	-2.35
20*	Includes participants choosing whether they want to participate in the PL program (i.e., without pressure or consequence for choice).	-4	-1.70	-4	-1.60	-4	-1.73
23*	Includes PL content that is consistent with school/district standards, goals and other initiatives.	0	-0.06	-1	-0.13	-1	0.00

25*	Includes occurring over an extended period of time.	-2	-0.79	-2	-0.64	-1	-0.35
39	Includes participants who are motivated to change instructional practices.	0	-0.23	-2	-0.44	-2	-0.80
42*	Includes opportunities for participants to reflect on their practice (e.g., through group discussion, portfolios, etc.).	-1	-0.42	0	0.01	0	0.04

Note. P < . 05; asterisk (*) indicates significance at p < .01. Both the factor Q-Sort value and the normalized score are shown.

All the Providers universally strongly perceived origination of the PLP to not matter (i.e., from outside or inside the school district; statements 14 and 19). It seemed they agreed PLPs can be effective whether they are from inside or outside the school district. They also all strongly agreed SETs should not be given the choice to attend PL programs (statement 20). These Providers not surprisingly have a positive perception of the services they offer and should expect others to benefit from their PL programs.

Providers also had generally strong positive perceptions regarding the process of the PL program for SETs. These Providers believed sustained implementation with support is necessary for SETs to successfully implement the PL content in their school setting (statement 8). Further, they believed the PL learning design for SETs to be successful needs to be based on applied learning theories and research, which includes active engagement and various forms of modeling of the new information (statements 5 and 10). These Providers also revealed that SETs successful use of the content is dependent on the content meeting their students' needs (statement 17); consequently, the PL program should be based on actual student data that indicates areas of support (statement 15).

Discussion

This study contributed to the limited literature examining PL designed specifically for SETs by offering interesting findings about Consumers and Providers' perceptions of key factors to SETs successfully using the content from high-quality PL experiences in their school settings. Research not only suggests SWDs experience academic, emotional, and behavioral outcomes below expectations (Cortiella, 2007; Thurlo et al., 2011) and many SETs are unprepared to implement the necessary change, but also that high-quality PL for SETs is an important way to address these areas of concerns (Correa & Wagner, 2011; McLeskey, 2011; Odom, 2009).

However, much of the PL research has focused on GETs exclusively or the joint efforts of SETs and GETs. The current study used Q methodology to better understand SETs' and special education PLPs' views of the most and least important characteristics of high-quality PL for SETs. Given Bandura's (1986) theory that people tend to act according to their beliefs, understanding the perspectives of key special education PL stakeholders regarding elements of effective PL can help future SETs' PL be executed and accepted more effectively (Baker 2006; Papworth & Walker, 2008).

While at first glance it may seem like some rankings contradict others, in Q methodology, all the statements must fit somewhere into the sorting distribution. Consequently, statements ranked at the lower end of the curve are viewed as less important (i.e., not unimportant or necessarily "negative") in comparison to the preceding ranked statements. Further, during the study and post-sort interviews, most participants noted difficulty of sorting due to the majority of the statements seeming important (i.e., positive). Results from this study revealed three perspectives emerged for each group (i.e., Consumers and Providers) regarding how they perceive PL. While each factor is unique, these outlooks distinguished some overall different audience and provider needs and foci and further analysis provided similarities and differences between the Consumers' and Providers' viewpoints (see Figure 2).

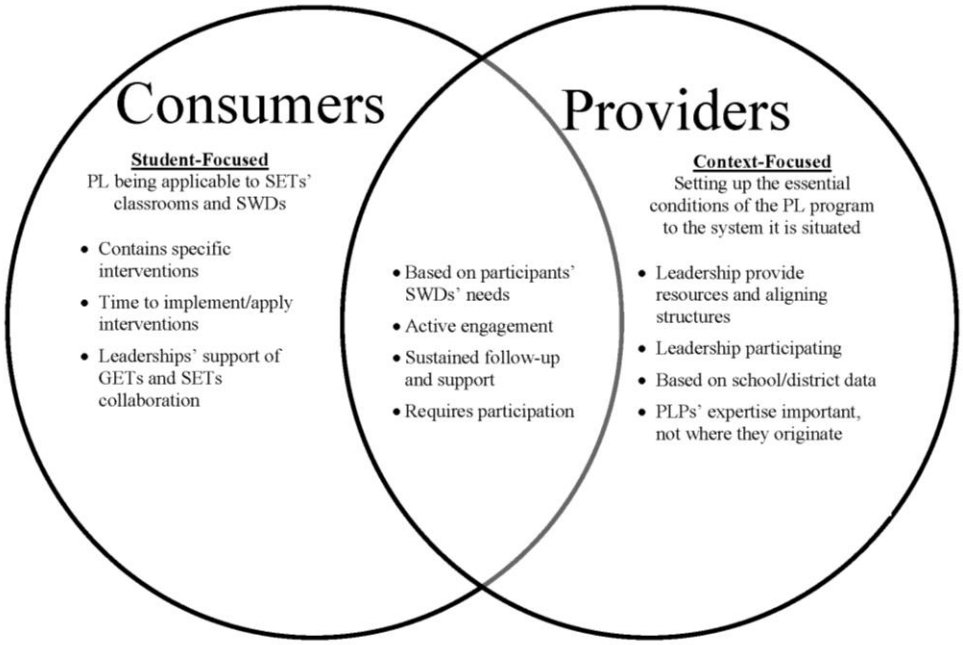

Figure 2. Venn Diagram of Consumers' and Providers' Similarities and Differences.

Similarities Consumers and Providers

First, a central common understanding of successful PL for SETs is the recognition that the PL needs to be relevant by being informed by data from participants' own students' needs (statement 17). Both Consumers (Factor 1 and 2) and Providers (all factors; consensus) valued using participants' SWDs' performance data to identify the focus of the PL efforts (Learning Forward, 2011; Torgesen, Meadows, & Howard, 2006). This may be even more essential for SETs' PL as SWDs have wide-ranging, unique and diverse needs of (e.g., Cook & Schirmer, 2006; Cook et al., 2011). This shared perception likely indicates data should be used to identify and select the specific areas of need SWDs, who are a diverse group. This would allow the PL content to be differentiated to support the SET participants' specific SWDs. Using SETs' student data to help define the goals of the PL is linked to the fundamental idea that if the content is appropriate and targeted, PL can improve SETs' practices and SWDs' outcomes (Correa &

Wagner, 2011; Klingner et al., 2013; McLeskey & Billingsly, 2008; Odom, 2009; e.g., Torgesen, Meadows, & Howard, 2006).

Second, both participant groups desired the PL program's design to involve active learning integrated into classroom practice. Both Consumers (all factors consensus, statement 15; Factors 1 and 3, statement 5) and Providers (all factors consensus, statements 5 and 15) highlighted the importance of active engagement in the learning process of the PL program; they were most interested in opportunities for the SETs to interact with the content and get involved in the learning as opposed to being passive recipients of information (Desimone, 2009, 2011; Guskey & Yoon, 2009; Learning Forward, 2011). Specifically, Consumers and Providers agreed it is most beneficial for SETs to interact with and apply new skills and receive feedback. This core perspective highlighted a basic principle of adult learning, namely, through active engagement, educators can construct personal and deep understanding of the new information, are more committed to its success, and can identify authentic applications (Learning Forward, 2011). This finding is also consistent with the PL research for GETs that suggest PL programs with active learning activities, such as interactive feedback and analyzing student work, significantly increased participant teachers' use of the PL content (e.g., Borko, 2004; Desimone, Porter, Garet, Yoon, & Birman, 2002; Garet et al., 2001; Ingvarson, Meiers, and Beavis, 2005).

Third and also related to the PL learning processes, both Consumers and Providers (consensus; statement 8) specified the importance of sustained follow up and support for SETs to successfully implement the PL content in their classrooms. This desire is clearly distinguished from both groups' significantly less interest in extended training sessions (consensus; statement 25). While Consumers and Providers appear to perceive extending training sessions as possibly more of a time burden and not necessary to convey the content, both groups recognized the

importance of ongoing support for the application of new skills at the implementation site (Learning Forward, 2011). The PL program was viewed as less valuable without job-embedded assistance since participants may struggle to adapt new instructional practices to their unique classroom contexts (Guskey & Yoon, 2009). Similar to the desire for relevant content, this concern seems especially true for SETs trying to adapt the training to their unique and diverse settings and students. SETs may struggle to integrate practices into their specific contexts if they do not have sufficient time to work with the practices or if there is a poor fit between the practices and the curriculum (Klingner, Ahwee, Pilonieta, & Menendez, 2003; Dingle et al., 2011). This perspective of the current participants corroborates the position taken by Learning Forward arguing that PL must apply research on individual and organizational change to support long-term implementation. Research on change has shown learning is sustained through meaningful opportunities for structured practice and sustained follow-up support provided by coaches (Joyce & Showers, 2002; Allen, Pianta, Gregory, Mikami, & Lun, 2011; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007).

Fourth and final, most Consumers (Factor 1 and 2) and all Providers (consensus statement) were least interested in SET participants having the choice to participate in the PL (statement 20). The Consumers that aligned with this viewpoint may not have valued choice as they perceived PL with certain attributes as being able to help SETs learn how to solve classroom problems and meet student needs. If PL contains certain high-quality characteristics (e.g., specific interventions, adequate time, and leadership encouraging collaboration between SETs and GETS), then these Consumers believed choice in participation was less important as the PL would be beneficial. Further, not surprisingly given their position as providing PL, Providers thought everyone should attend PL as they most likely endorse the benefit the

programs they present. In comparison, some Consumers (Factor 3) did not agree with this viewpoint and thought that SETs should have a voice and choice in the PL they attend, which aligns with previous research (Bill & Melinda Gates Foundation, 2014) that teachers with more choice in their PL opportunities reported much higher levels of satisfaction. However, this perspective is consistent with these specific Consumers' strong interest in the PL being immediately applicable and, consequently, they would want to be able to choose whether the PL fits with their current needs.

Differences between Consumers' and Providers' perspectives:

There were also important differences between Consumers' and Providers' perceptions of the most important factors to SETs successfully using the content from PL experiences in their school setting. Overall, Consumers were most interested in PL programs being useful and beneficial to SETs' students and classrooms. In other words, Consumers were more student-focused. All Consumers agreed on the importance of the content including specific interventions to use with their struggling students (Factors 1, 2, and 3, statement 40). Also, while these Consumers requested enough time for SETs to implement those specific interventions with their SWDs (Factors 2 and 3, statement 45), there was little desire for SETs to meet with other teacher participants regularly (i.e., to collaborate; Factor 2, statement 11) or, as mentioned, have the training occur over an extended period of time (all factors; statement 25). These Consumers specifically were interested in making sure there was enough time to understand and figure out how to apply the intervention to their students. In keeping with their focus on the content being applicable to SETs' classroom and student needs, these Consumers were less interested with PL programs aligning with the needs of the broader school/district (Factors 1 and 3; statement 27).

In addition, consistent with the perception of the applicability of the PL program to the SET participants' classrooms, most Consumers (Factor 1 and 2; statement 41) highlighted the importance of leadership supporting collaboration between SETs and GETs (i.e., co-teaching or resource teachers working with GETs to support students). These Consumers were less interested in leadership participating in the PL or taking on leadership roles themselves (e.g., train-the-trainer; Factor 3, statements 31 and 36); they primarily wanted leadership to support classroom practices that impact students, which would include SETs collaboration with GETs. These Consumers anticipated that without leadership support, collaboration issues with GETs are a potential obstacle for implementation of PL content. This concern is supported by the literature that administrative support is vital to the success of collaborative practices between SETs and GETs (Billingsley, McLeskey, & Crocket, 2014; Youngs, Jones, & Low, 2011) as well as SETs fulfilling their responsibilities, such as implementing PL content (Billingsley, Griffin, Smith, Kamman, & Israel, 2009; Billingley et al.). For successful classroom instruction and partnership between SETs and GETs, school administrators should provide specific time for collaboration and communicate clearly defined roles and responsibilities for team members (Kohm & Nance, 2009; Minnett, 2003).

In comparison to Consumers' desire for the PL to be student-focused with applicable content and support in the school setting, Providers generally were more context-focused and interested in establishing the essential conditions of the PL for SETs. These Providers perceived it as primary that leadership ensures organizational systems and structures support SETs' PL (Factors A and C, statements 4, 9, and 36). They desired school leaders to be present and participate in the PL program from the onset, which would make it easier for them to ensure policies and structures are aligned and resources are adequately distributed to accomplish SETs'

PL goals. This corresponds to evidence-based PL research findings that for successful PL for GETs, leaders need to understand the needs of the community, ensure appropriate human and fiscal resources, and be facilitators (e.g., organizing, engaged in, coaching, etc.) who are actively involved in the programs (Correa & Wagner, 2011; Furney, Aiken, Hasazi, & Clark/Keefe, 2005; Irvine, Lupart, Loreman, & McGhie-Richmond, 2010; Learning Forward, 2011; Shepherd, 2006). Further, these Providers (statement 27; Factor A) thought system data should be utilized to modify PL to meet the unique characteristics of the school/district the SET participants are situated.

Consistent with the interest in establishing the appropriate context of the PL, Providers had distinct perspectives on the PLPs for SETs, which SETs did not have definite views. PLPs believed PL facilitators are a vital resource that can affect access to, quality of, and effectiveness of educator PL (Learning Forward, 2011). As part of the essential conditions of SETs' PL, PLPs need to have an expertise in the PL subject matter (statement 24, Factor B). This is consistent with previous studies on PL for GETs' finding that for teachers to be successful with PL experiences facilitator expertise was seen as important (e.g., Starkey et al., 2009). However, while previous research is unclear of whether PLPs should be site-based and in-house (e.g., James & McCormick, 2009; Leko & Bronwell, 2009) or come from outside the school system (e.g., Guskey & Yoon, 2009; Starkey et al., 2009), these Providers agree that where the facilitator originates does not matter (all factors; consensus statements 14 and 19). These participants perceived that if PLPs have an expertise and work with the system and leadership to establish an effective structure for SETs' PL, where the facilitators originated was insignificant to SETs' successful implementation of the PL content.

Summary

Overall, both the Consumers' and Providers' perceptions regarding successful PL for SETs highlighted PL being based on SETs' SWDs' needs, including active engagement and sustained implementation support, and requiring participation. However, Consumers were generally more focused on the PL being applicable to SETs' classroom needs, whereas Providers were most interested in the PL for SETs fitting into the overall educational system (i.e., the context; e.g., school, district, state). In particular, within the Consumers' perspectives, there was little concern for the larger district, as they attributed successful PL largely to its value to SETs' SWDs and classroom setting. They largely indicated wanting specific interventions, adequate time for implementation (i.e., not training), and leadership support for collaboration with GETs. The Providers' beliefs emphasized a more context focus. Providers were primarily interested in establishing SETs' PL had adequate school resources and support, leaderships' involvement, facilitators' expertise, and being based on school/district needs. While all of these elements are part of high-quality PL, it is clear that Consumers and Providers have differing opinions on some the most important characteristics for SETs implementation of the content learned.

Future Recommendations

Findings from the current study have important implications for understanding Consumers' and Providers' perceptions of successful PL for SETs. High-quality PL can help improve teacher instruction and student outcomes and examining the elements that Consumers and Providers identify as most important in SETs implementing the PL content may provide explicit guidance to those helping to facilitate PL for SETs. In the current study, Consumers and Providers both agreed that PL for SETs should be based on actual student data, include active engagement integrated into classroom practice, and have sustained follow-up and support for implementation of the content. Differences between the groups included SETs more focused on

the PL being applicable and beneficial to SWDs and PLPs most interested in the PL having the support of leadership and aligning with the school/district.

Given Consumers' narrow focus on the applicability of the PL content to their classroom needs, SETs' PL programs should offer specific tools and take always that SETs can use directly with their SWDs. Further, Providers would benefit from being aware of Consumers' focus on the usability of the content. During trainings, PLPs can address what SETs believe are priority needs at the beginning to help with buy-in at the start of training. In addition, PLPs may need to spend time educating SETs on the value of other evidence-based elements of PL, such as extended time, alignment to the school/district, and learning communities, so SETs understand why they are participating in these elements and, hopefully, become more likely to find the value of and the applicability for the received PL.

While Consumers' (Factor 1 and 2) desire for leadership to encourage collaborative relationships between general and special education teachers may be more dependent on their respective settings (i.e., co-teaching and/or resource room), it is clear teachers who work frequently with GETs want more supportive collaboration, especially when implementing new skills. Additionally, Providers reported a strong interest in academic leaders being involved in the PL program for SETs. Though for different reasons, both groups of participants desired leadership's involvement for successful implementation of the PL content. Unfortunately, an initial review of the literature indicates little, if any, specialized professional development training is available to prepare school leaders to support SETs and address the educational needs of SWDs (DeMatthews & Edwards, 2014; Jahnukainen, 2015; Kemp-Graham, 2015; Pazey & Cole, 2014). Administrators need to receive adequate training in the best methods, resources, and strategies to assist those instructing the SWDs in their schools.

Further, perhaps administrators, including principals, in conjunction with SETs' PL, can support collaboration between all staff in the building by encouraging learning communities. Research has demonstrated positive outcomes for SWDs improvement when their SETs and GETs are part of professional learning communities (Vescio, Ross, & Adams, 2008; Blanton & Perez, 2011). This could also be an opportunity to provide embedded learning and sustained implementation support in a structured setting for SETs to collaborate with GETs (Wood, 2005).

Limitations and Future Directions

Limitations. Although Q methodology makes no claim to be exhaustive (Stainton Rogers, 1995), one limitation is that the method is constrained by the participant sample. The current study participants were limited to a SET and special education PLP population from a large metropolitan area in the southeast United States. Even though this study was conducted in the United States, educational differences, such as PL experiences and needs, within and between SETs in various states and locations may be significant (e.g., Carnoy, Garcìa, & Khavenson, 2015). Similarly, the role and responsibility of SETs differs due to the continuum of services, settings, and characteristics of SWDs. Special education is a complex field and due to the variability of its participants with disabilities it can be difficult to conduct research in a consistent manner (Berliner, 2002).

This study was purely exploratory and took a broad social constructionist approach. Another possibility was to concentrate on the differences and similarities between specific stakeholders regarding understandings of effective PL for SETs, such as leadership and PLPs or between different types (e.g., location, job area, expertise) of SETs. Q methodology offers many possibilities for studying variety in cultural beliefs. However, it is not appropriate to study representativeness of particular understandings in certain classes of the population. Q

methodology is well designated to explore variety, yet other methodologies with larger samples are necessary to tackle questions about representativeness. Making a plea for methodological pluralism, other qualitative and quantitative methods are required to study these complex influence processes. PL and special education are fascinating subjects that would benefit from a multimethod approach, particularly based on the results of the current study.

Another important limitation of this study regards the use of self-reports, because this method can involve bias. Moreover, no generalization can be made regarding actual behaviors of SETs and special education PLPs, as the connections between humans' beliefs and behavior is complex and nonlinear. Finally, a limitation of the study was the 35 participants in the study were volunteers. The participants could have different memories of PL based on their own unique experiences. There is potential for ambiguity based on the interpretation of the statements by the 35 participants in the Q-sorts.

Future Research. Future researchers could conduct interviews to explore the reasons for the overlapping data on factors included here. Further, the few previous studies on SETs' PL found that individual qualities, such as subject-matter knowledge and motivation to participate and change practices (Brownell et al.; Dingle et al.), influence their ability to benefit from PL, yet none of them were significant important characteristics of PL for either group in any of the resulting factors of this study. Future research could further explore the relationship between individual SET characteristics and the factors that emerged from this research.

Throughout Consumers' factor analysis, though in different ways, time was a common theme that arose. Consumers, more than any other element, appeared to value time in regards to learning and implementing the content; they did not want SETs' time to be used superfluously. If SETs feel they are always pressed for time, then perhaps the idea of PL is one more drain

instead of a valuable addition. Future research could examine time from various standpoints, including examining if time is really a primary valuation of PL for SETs. Also, researchers could explore whether control or lack of control SETs have over their schedule impacts their perceptions of time spent on PL.

While this study did not specify a particular type of classroom setting, such as only self-contained or co-teaching, Consumers' perspectives suggested that their perspectives on PL may be influenced by the requirements of specific settings. For example, Consumers who worked in co-teaching or resource settings and interacted with GETs (i.e., more than self-contained teachers) desired leaderships' support for collaboration between SETs and GETs. Using a quantitative design, future research could further investigate SETs' beliefs regarding PL across diverse teaching settings.

Conclusion

Because many of the over 6.5 million children being served through special education every year in the United States (National Center for Education Statistics, 2016) are struggling in school and SETs are under prepared to meet SWDs' needs (Boe & Cook, 2006), intervening to improve SETs' instruction via PL may better support SWDs. High-quality PL is a promising intervention to improve SETs' instruction and, consequently, improve SWDs' outcomes (Cook et al., 2011; Leko & Brownell, 2009). Previous research (e.g., Blank & de las Alas, 2009; Garet et al., 2001; Learning Forward, 2011; Wei et al., 2010) documented elements of evidence-based PL that improve teacher instruction and student outcomes. However, very few studies focus on how these evidence-based PL program characteristics apply to SETs' particular needs (Brownell et al., 2014; Dingle et al., 2011; Feng & Sass, 2012). The current study supports the notion that high-quality PL for SETs needs to be tailored to meet SETs' unique needs. Given SETs'

experiences and needs, both Consumers and Providers valued certain aspects of high-quality PL that enabled SETs to implement the content in their school setting. This promising study has provided a starting point for continued research and development in SETs' PL.

References

Addams, H. (2001). Q methodology. In H. Addams & J. Proops (Eds.), *Social discourse and environmental policy: An application of Q methodology* (pp. 14-41). Northampton, MA: Edward Elgar Publishing.

Allen, J. P., Pianta, R. C., Gregory, A., Mikami, A. Y., & Lun, J. (2011). An interaction-based approach to enhancing secondary school instruction and student achievement. *Science. 333,* 1034-1037. doi: 10.1126/science.1207998

Aud, S., Hussar, W., Kena, G., Bianco, K., Frohlich, L., Kemp, J., & Tahan, K. (2011). *The Condition of Education 2011* (NCES 2011-033). U.S. Department of Education, National Center for Education Statistics. Retrieved from http://nces.ed.gov/nationsreportcard/pdf/main2011/2012457.pdf

Baker, R. M. (2006). Economic rationality and health and lifestyle choices for people with diabetes. *Social Science & Medicine, 63,* 2341-235. doi:10.1016/j.socscimed.2006.06.007

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice Hall.

Berliner, D. C. (2002). Educational research: The hardest science of all. *Educational Researcher, 31*(8), 18-20.

Bill & Melinda Gates Foundation. (2014). *Teachers know best: Teachers' views on professional development.* Available at http://collegeready.gatesfoundation.org/wp-content/uploads/2015/04/Gates-PDMarketResearch-Dec5.pdf

Billingsley, B. S., Griffin, C. C., Smith, S. J., Kamman, M., & Israel, M. (2009). *A review of teacher induction in special education: Research, practice, and technology solutions.*

National Center to Inform Policy and Practice in Special Education Professional Development Document (No. RS-1). Retrieved from http://www.ncipp.org

Billingsley, B. S., McLeskey, J., & Crockett, J. B. (2014). Principal leadership: Moving towards inclusive and high-achieving schools for students with disabilities. Retrieved from http://www.cedar.org

Blank, R. K., & de las Alas, N. (2009). *Effects of teacher professional development on gains in student achievement: How meta-analysis provides scientific evidence useful to education leaders.* Retrieved from Council of Chief State School Officers website: http://www.ccsso.org/Documents/2009/Effects_of_Teacher_Professional_2009.pdf

Blanton, L. P., & Perez, Y. (2011). Exploring the relationship between special education teachers and professional learning communities: Implications for research for administrators. *Journal of Special Education Leadership, 24,* 6-16.

Boe, E. E., & Cook, L. H. (2006). The chronic and increasing shortage of fully certified teachers in special and general education. *Exceptional Children, 72,* 443-460.

Boe, E. E., Cook, L. H., & Sunderland, R. J. (2007). *The prevalence of various aspects of teacher preparation, induction, mentoring, extra support, professional development, and workload factors for beginning teachers in special and general education.* (No. 2007-DAR1). Retrieved from University of Pennsylvania, Center for Research and Evaluation in Social Policy website: http://www.gse.upenn.edu/cresp/

Boe, E. E., Cook, L. H., & Sunderland, R. J. (2008). Teacher turnover: Examining exit attrition, teaching area transfer, and school migration. *Exceptional Children, 71,* 7-31.

Borko, H. (2004). Professional development and teacher learning: Mapping the terrain. *Educational Researcher, 22*(8), 3-15.

Boudah, D. J., Blair, E., & Mitchell, V. J. (2003). Implementing and sustaining strategies instruction: Authentic and effective professional development or "Business as Usual"? *Exceptionality*, *11,* 3-23.

Browder, D. M., Jimenez, B. A., Mims, P. J., Knight, V. F., Spooner, F., Lee, A., & Flowers, C. (2012). The effects of a "Tell-Show-Try-Apply" professional development package on teachers of students with severe developmental disabilities. *Teacher Education and Special Education*, *35*, 212-227. doi: 10.1177/0888406411432650

Brown, J. D. (2009). Statistics corner: Questions and answers about language testing statistics: Choosing the right number of components or factors in PCA and EFA. Shiken: JALT *Testing and Evaluation SIG Newsletter, 13*(2), 19-23. Retrieved from http://jalt.org/test/bro_30.htm

Brown, S. R. (1980). *Political subjectivity: Applications of Q methodology in political science.* New Haven, CT: Yale University Press.

Brown, S. R. (1993). A primer on Q methodology. *Operant Subjectivity*, 16, 91–138.

Brown, S.R. (2004). Q methodology. In M. S. Lewis-Beck, A. Bryman, & T. F. Liao (Eds.), *The SAGE encyclopedia of social science research methods* (Vol. 3, pp. 887-888). Thousand Oaks, CA: Sage.

Brownell, M. T., Billingsley, B. S., McLeskey, J., & Sidelar, P. T. (2012). In J. B. Crockett, B. S. Billingsley, & M. L. Boscardin (Eds.), *Handbook of leadership and administration for special education.* New York: Routlege.

Brownell, M. T., Lauterbach, A., Benedict, A., Kimerling, J., Bettini, E., & Murphy, K. (2012). Preparing teachers to effectively deliver reading instruction and behavioral supports in

response to intervention frameworks. *Advances in Learning and Behavioral Disabilities, 25*, 247-277.

Brownell, M. T., Ross, D. D., Colón, E. P., & McCallum, C. L. (2005). Critical features of special education teacher preparation: A comparison with general teacher education. *The Journal of Special Education, 38*, 242-252.

Brownell, M. T., Hirsch, E., & Seo, S. (2004). Meeting the demand for high quality special education teachers during severe shortages: What should policymakers consider? *The Journal of Special Education, 38,* 57-61.

Brownell, M. T., Lauterbach, A. A., Dingle, M. P. Boardman, A. G., Urbach, J. E., Leko, M. M., Benedict, A. E., & Park, Y. (2014). Individual and contextual factors influencing special education teacher learning in literacy learning cohorts. *Learning Disability Quarterly, 37,* 31-44. doi: 10.1177/0731948713487179

Buczynski, S., & Hansen, C. B. (2010). Impact of professional development on teacher practice: Uncovering connections. *Teaching and Teacher Education, 26*, 599-607.

Budaev, S. V. (2010). Using principal components and factor analysis in animal behavior research: Caveats and guidelines. *Ethology, 116*, 472-480. doi:10.1111/j.1439-0310.2010.01758.x

Bureau of Labor Statistics. (2012, March 29). Occupational employment statistics: May 2011 national occupational employment wage estimates United States. Retrieved from http://www.bls.gov/oes/current/oes_nat.htm#00-0000

Burns, M. K., & Ysseldyke, J. E. (2009). Reported prevalence of evidence-based instructional practices in special education. *The Journal of Special Education, 43,* 3-11. doi: 10.1177/0022466908315563

Cattell, R. B. (1978). *The scientific use of factor analysis.* New York: Plenum.

Clarke, D., & Hollingsworth, H. (2002). Elaborating a model of teacher professional growth. *Teaching and Teacher Education, 18,* 947-967.

Carnoy, M. Garcìa, E. & Khavenson, T. (2015). *Bringing it back home: Why state comparisons are more useful than international comparisons for improving U.S. educational policy* (Briefing Paper #410). Retrieved from Economic Policy Institute website: http://www.epi.org/publication/bringing-it-back-home-why-state-comparisons-are-more-useful-than-international-comparisons-for-improving-u-s-education-policy/

Cook, B. G., & Schirmer, B. R. (2006).An overview and analysis of the role of evidence-based practices in special education. In B. G. Cook & B. R. Schirmer (Eds.), *What is special about special education? Examining the role of evidence-based practices*. Austin, TX: PRO-ED, Inc.

Cook, B. G., Smith, G. J., & Tankersley, M. (2011). Evidence-based practices in education. In S. Graham, T. Urban, & K. Harris (Eds.), *APA educational psychology handbook* (Vol. 3). Washington, DC: American Psychological Association.

Correa, V. I., & Wagner, J. Y. (2011). Principals' roles in supporting the induction of special education teachers. *Special Education Leadership, 24,* 17-25.

Cortiella, C. (2007). *Rewards and roadblocks: How special education students are faring under No Child Left Behind*. New York: National Center for Learning Disabilities.

Cottle, C. E., & McKeown, B. F. (1980). The forced-free distinction in Q technique: A note on unused categories in the Q sort continuum. *Operant Subjectivity,* 3(2), 58-63.

Cronin-Jones, L. L. (1991). Science teacher beliefs and their influence on curriculum implementation: Two case studies. *Journal of Research and Science Teaching, 28,* 235-250.

Cutcliffe, J., & McKenna, H. (2002). When do we know what we know? Considering the truth of research findings and the craft of qualitative research. *International Journal of Nursing Studies, 39,* 611-618.

Davis, C. H., & Michelle, C. (2011). Q metholdogy in audience research: Bridging the qualitative/quantitative "divide"? *Participations: Journal of Audience & Reception Studies, 8,* 559-593.

DeMatthews, D. E., & Edwards Jr, D. B. (2014). Preparing school leaders for special education: Old criticisms and new directions. *School Leadership, 41*. Retrieved from http://tcpea.org/cms/lib07/TX01923126/Centricity/Domain/191/winter14.pdf#page=46

Dennis, K. (1986). Q methodology: Relevance and application to nursing research. *Advances in Nursing Science, 8*(3), 6-17.

Dennis, K. E. (1992/1993). Looking at reliability and validity through Q-colored glasses. *Operant Subjectivity, 16,* 37-44.

Desimone, L. M., Porter, A. C., Garet, M. S., Yoon, K. S., Birman, B. F. (2002). Effects of professional development on teachers' instruction: Results from a three-year longitudinal study. *Educational Evaluation and Policy Analysis, 24,* 81–112.

Dingle, M. P., Brownell, M. T., Leko, M. M., Boardman, A. G., & Haager, D. (2011). Developing effective special education reading teachers: The influence of professional development, context, and individual qualities. *Learning Disability Quarterly, 34,* 87-103.

Dziopa, F., & Ahern, K. (2011). A systemic literature review of the applications of Q-technique and its methodology. *Methodology: European Journal of Research Methods for the Behavioral and Social Sciences, 7*(2), 39-55.

Emery, D. W., & Vandenberg, B. (2010). Special education teacher burnout and act. *International Journal of Special Education, 25,* 119-128. Retrieved from http://www.internationaljournalofspecialeducation.com/articles.cfm

Every Student Succeeds Act of 2015, Pub. L. No. 114-95 No: 114-95 § 114, S. 1177 (2015).

Eysenck, M. W., Mogg, K., May, J., Richards, A., Mathews, A. (1991). *Journal of Abnormal Psychology, 100,* 144-150.

Fairweather, J. R. (1981). Reliability and validity of Q-method results: Some empirical evidence. *Operant Subjectivity, 5,* 2-16.

Feng, L., & Sass, T. R. (2012). *What makes special education teachers special? Teacher training and achievement of students with disabilities* (Working Paper 12-10). Retrieved from Andrew Young School of Policy Studies website: http://aysps.gsu.edu/

Fisher, R. A. (1960). *The design of experiments* (7th ed.). New York: Hafner Publishing Company.

Furney, K. S., J. Aiken, S. Hasazi, and K. Clark/Keefe. (2005). Meeting the Needs of All Students: Contributions of Effective School Leaders. *Journal of School Leadership, 15,* 546–570.

Gallagher, K., & Porock, D. (2010). The use of interviews in Q methodology: Card content analysis. *Nursing Research, 59,* 295-300.

Garet, M. S., Porter, A. C., Desimone, L, Birman, B. F., & Yoon, K. S. (2001). What makes professional development effective? Results from a national sample of teachers.

American Education Research Journal, 38, 915-945. doi: 10.3102/00028312038004915

Garet, M. S., Porter, A. C., Desimone, L., Birman, B. F, & Yoon, K. S. (2001). What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal, 38,* 915-945.

Glaser, B., & Strauss, A. (1967). *The Discovery of Grounded Theory*. Chicago, IL: Aldine.

Graham, S. (Ed.), Cook, B., Tankersley, M., & Landrum, T. (Guest Eds.). (2009). Evidence-based practices for reading, math, writing, and behavior [Special Issue]. *Exceptional Children, 75,* 262-383.

Graham, S. (Ed.). (2005). Criteria for evidence-based practice in special education [Special Issue]. *Exceptional Children, 71,* 135-207.

Greenberg, J., Walsh, K., & McKee, A. (2015). *2014 Teacher Prep Review: A review of the nation's teacher preparation programs.* Retrieved from National Council on Teacher Quality website: http://www.nctq.org/dmsView/Teacher_Prep_Review_2014_Report

Guskey, T. R., & Yoon, K S. (2009). What works in professional development. *Phi Delta Kappan, 90,* 495-500.

Harman, H. H. (1976). *Modern factor analysis.* Chicago: The University of Chicago Press.

Harwood, W. S., Hansen, J., & Lotter, C. (2006). Measuring teacher beliefs about inquiry: the development of a blended qualitative/quantitative instrument. *Journal of Science Education and Technology, 15,* 69–79.

Hayton, J. C., Allen, D. G., & Scarpello. (2004). Factor retention decisions in exploratory factor analysis: A tutorial on parallel analysis. *Organizational Research Methods, 7,* 191-205.

Herrington, N. & Coogan, J. (2011). Q methodology: An overview. *Research in Secondary Teacher Education, 1*(2), 24-28.

Individuals with Disabilities Education Improvement Act (IDEIA) of 2004, 20 U.S.C. § 1400 et seq. (2004)

Ingvarson, L., Meiers, M., & Beavis, A. (2005). Factors affecting the impact of professional development programs on teachers' knowledge, practice, student outcomes. In S. Dorn (Ed) *Education Policy Analysis Archives*, *13* (10), 1-28.

Irvine, A., Lupart, J., Loreman, T., & McGhie-Richmond, D. (2010). Educational leadership to create authentic inclusive schools: The experiences of Pembina Hills principals. *Exceptionality Education International, 20(2),* 70-88.

Jahnukainen, M. (2015). Inclusion, integration, or what? A comparative study of the school principals' perceptions of inclusive and special education in Finland and in Alberta, Canada. *Disability & Society*, *30*(1), 59–72. doi: 10.1080/09687599.2014.982788

Johnson, C. C. (2006). Effective professional development and change in practice: Barriers teachers encounter and implications for reform. *School Science and Mathematics*, *106*(3), 1–12.

Jones, M. L. (2009). A study of novice special educators' views of evidence-based practices. *Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children*, *32*, 101-120. doi: 10.1177/0888406409333777

Jonson, C., Milltello, M., & Kosine, N. (2008). Four views of the professional school counselor-principal relations: A Q-methodology study. *Professional School Counseling, 11,* 353-361.

Joyce, B., & Showers, B. (2002). Student achievement through staff development. In B. Joyce & B. Showers (Ed.) *Designing training and peer coaching: Our needs for learning*.

Alexandria, VA: Association for Supervision and Curriculum Development. http://literacy.kent.edu/coaching/information/Research/randd-engaged-joyce.pdf

Kemp-Graham, K. Y. (2015). Missed opportunities: Preparing aspiring school leaders for bold social justice school leadership needed for 21st century schools. *NCPEA International Journal of Educational Leadership Preparation, 10*, 99-129.

Kieffer, K. M. (1998, November 4). *Orthogonal versus oblique factor rotation: A review of the literature regarding the pros and cons*. Paper presented at the Annual Meeting of the Mid-South Educational Research Association, New Orleans, LA.

Kline, P. (1994). *An easy guide to factor analysis.* London: Routledge.

Klingner, J. K. (2004). The science of professional development. *Journal of Learning Disabilities, 37*, 248-255.

Klingner, J. K., Boardman, A. G., & McMaster, K. L. (2013). What does it take to scale up and sustain evidence-based practices? *Exceptional Children, 79*, 195-211.

Klingner, J. K., Vaughn, S., Hughes, M. T., & Arguelles, M. E. (2003). Sustaining research-based practices in reading: A three year follow-up. *Remedial and Special Education, 20*, 263–287.

Klingner, J., Ahwee, S., Pilonieta, P., & Menendez, R. (2003). Barriers and facilitators in scaling up research-based practices. *Exceptional Children, 69*, 411–429.

Kohm, B., & Nance, B. (2009). Creating collaborative cultures. *Educational Leadership, 67*(2), 67-72.

Lang, M., & Fox, L. (2003). Breaking with tradition: Providing effective professional development for instructional personnel supporting students with severe disabilities.

Teacher Education and Special Education, 26, 17-26. doi: 10.1177/088840640302600103

Learning Forward. (2011). *Standards for professional learning.* Oxford, OH: Author.

Leko, M. M., & Brownell, M. T. (2009). Crafting quality professional development for special educators: What school leaders should know. *Teaching Exceptional Children, 42,* 64-70.

Lincoln, Y., & Guba, E. (1985). *Naturalistic Inquiry.* London: Sage.

Little, J. W. (2003). Inside teacher community: Representations of classroom practices. *Teachers College Record, 105,* 913-945.

Losen, D. J., & Gillespie, J. (2012). *Opportunities suspended: The disparate impact of disciplinary exclusion from school.* Retrieved from The Civil Rights Project website: http://civilrightsproject.ucla.edu/

Mazzotti, V. L. Rowe, D. R., & Test, D. W. (2012). Navigating the evidence-based practice maze: Resources for teachers of secondary students with disabilities. *Intervention in School and Clinic,48,* 159-166. doi: 10.1177/1053451212454004

McKenzie, R. G. (2009). A national survey of pre-service preparation for collaboration. *Teacher Education and Special Education, 32,* 379-393. doi: 10.1177/0888406409346241

McKeown, B. & Thomas, D. (1988). *Q methodology*. In M. S. Lewis-Beck (Series Ed.), *Sage University Paper Series: Quantitative Applications in the Social Sciences* (Series Number: 07-066). Newbury Park, CA: Sage Publications.

McLeskey, J. (2011). Supporting improved practice for special education teachers: The importance of learner-centered professional development. *Journal of Special Education Leadership, 24,* 26-35.

McLeskey, J., & Billingsley, B. S. (2008). How does the quality and stability of the teaching force influence the research-to-practice gap? A perspective on the teacher shortage in special education. *Remedial and Special Education, 29*, 293-305. doi: 10.1177/0741932507312010

McLeskey, J., Landers, E., Hoppey, D., & Williamson, P. (2011). Learning disabilities and the LRE mandate: An examination of national and state trends. *Learning Disabilities Research, 26*, 60-66.

Miles, M. B., & Huberman, M. A. (1994). Qualitative Data Analysis: An Expanded Sourcebook. Thousand Oaks, CA: Sage.

Minnett, A. (2003) .Collaboration and shared reflections in the classroom. *Teachers and Teaching, 9*, 279-285.

Mostert, M. P. (2011). A journey from awareness and advocacy to action: Special education in the United States. In M. A. Winzer & K. Mazurek (Eds.), *International practices in special education: Debates and challenges.* Washington: Gallaudet University Press

National Center for Education Statistics, (2016, May). *Children and youth with disabilities.* Retrieved http://nces.ed.gov/programs/coe/indicator_cgg.asp

National Center for Learning Disabilities. (2010, September). *Teacher effectiveness and professional development* (policy brief). Retrieved from http://www.ncld.org

Newman, I., & Ramlo, S. (2010). Using Q methodology and Q factor analysis in mixed method research. In A. Tashakkori & C. Teddlie (Eds), *Sage Handbook of Mixed Methods in Social and Behavioral Research* (2nd ed.) (pp.505-530). Thousand Oaks, CA: Sage Publications.

Newman, L., Wagner, M., Knokey, A.-M., Marder, C., Nagle, K., Shaver, D., Wei, X., Cameto, R., Contreras, E., Ferguson, K., Greene, S., & Schwarting, M. (2011). *The post-high school outcomes of young adults with disabilities up to 8 years after high school. A report from the National Longitudinal Transition Study-2 (NLTS2)* (NCSER 2011-3005). Retrieved from National Center for Special Education Research website: http://ies.ed.gov/ncser/pubs/20113005/pdf/20113005.pdf

No Child Left Behind (NCLB) Act of 2001, Pub. L. No. 107-110, § 115, Stat. 1425 (2002).

Odom, S. L. (2009). Evidence-based practice, implementation science, and outcomes for children. *Topics in Early Childhood Special Education,29,* 53-61. doi: 10.1177/0271121408329171

Oh, W. O., & Kendall, J. (2009). Patterns of parenting in Korean mothers of children with ADHD: A Q-methodology study. *Journal of Family Nursing, 15,* 318-342. doi: 10.1177/1074840709339595

Osipova, A., Prichard, B., Boardman, A. G., Kiely, M. T., & Carroll, P. E. (2011). Refocusing the lens: Enhancing elementary special education reading instruction through video self-reflection. *Learning Disabilities Research & Practice, 26,* 158-171.

Øverland, K., Thorsen, A. A., & Størksen, I. (2012). The beliefs of teachers and daycare staff regarding children of divorce: A Q methodological study. *Teaching and Teacher Education, 28,* 312-323. doi:10.1016/j.tate.2011.10.010

Papworth, M., & Walker, L. (2008). The needs of primary care mental health service users: A Q-sort study. *Mental Health in Family Medicine, 5,* 203-212.

Patton, M. (1990). *Qualitative evaluation and research methods.* Beverly Hills, CA: Sage.

Pazey, B. L., & Cole, H. A. (2013). The role of special education training in the development of socially just leaders building an equity consciousness in educational leadership programs. *Educational Administration Quarterly*, *49*, 243–271.

Ramlo, S. (2008). Student perspectives on learning physics and their relationship with learning force and motion concepts: A study using Q methodology. *Human Subjectivity, 2,* 73-90.

Rogers, M. P., Abell, S., Lannin, J., Wang, C. Y., Musikul, K., Barker, D., & Dingman, S. (2007). Effective professional development in science and mathematics education: Teachers' and facilitators' views. *International Journal of Science and Mathematics Education*, *5*, 507-532. doi: 10.1007/s10763-006-9053-8

Rose, C. A., Monda-Amaya, L. E., & Espelage, D. L. (2011). Bullying perpetration and victimization in special education: A review of the literature. *Remedial and Special Education, 32,* 114-130.

Schmolck, P. (2002). *PQMethod Manual* (version 2.11). Retrieved from http://schmolck.org/qmethod/pqmanual.htm

Shepherd, K. (2006.) Supporting all students: The role of school principals in expanding general education capacity using resource to intervention teams. *Journal of Special Education Leadership, 19* (2), 30–38.

Sidelar, P. T., Brownell, M. T., & Billingsley, B. (2010). Special education teacher education research: Current status and future direction. *Teacher Education and Special Education, 33*, 8-24. doi: 10.117/0888406409358593

Smith, G. J., Richards-Tutor, C., & Cook, B. G. (2010). Using teacher narratives in the dissemination of research-based practices. *Intervention in School and Clinic*, *46*, 67-70. doi: 10.1177/1053451210375301

Spooner, F., Knight, V. F., Browder, D. M., & Smith, B. R. (2012). Evidence-based practice for teaching academics to students with severe developmental disabilities. *Remedial and Special Education, 22,* 374-387. doi: 10.1177/0741932511421634

Stephenson, W. (1953). *The study of behavior: Q-technique and its methodology*. Chicago: The University of Chicago Press.

Strieker, T., Logan, K., & Kuhel, K. (2012). Effects of job-embedded professional development on inclusion of students with disabilities in content area classrooms: results of a three-year study. *International Journal of Inclusive Education*, *16*, 1047-1065.

Stronge, J. H., Ward, T. J., & Grant, L. W. (2011). What makes good teachers good? A cross-case analysis of the connection between teacher effectiveness and student achievement. *Journal of Teacher Education, 64*, 339-355. doi: 10.1177/0022487111404241

Taylor, J., Stecher, B., O'Day, J., Naftel, S., & Le Floch, K.C. (2010). *State and local implementation of the No Child Left Behind Act, Volume IX—Accountability under NCLB: Final report.* Retrieved from U.S. Department of Education, Office of Planning, Evaluation, and Policy Development, Policy and Program Studies Service website http://www2.ed.gov/rschstat/eval/disadv/nclb-accountability/nclb-accountability-final.pdf

Thomas, D. B., & Bass, L. R. (1992/1993). The issue of generalization in Q methodology: Reliable schematics revisited. *Operant Subjectivity, 16,* 18-36.

Thorman, J. L. (2006). Teachers' perceptions of professional development. *Journal of Human Subjectivity, 4,* 96-110.

Thurlow, M. L., Quenemoen, R. F., & Lazarus, S. S. (2011). *Meeting the needs of special education students: Recommendations for the Race to the Top consortia and states.* Washington, DC: Arabella Advisors.

Tielen, M., van Staa, A., Jedeloo, S. van Exel, N. J. A., and Weimar, W. (2008, March 15). Q-Methodology to Identify Young Adult Renal Transplant Recipients at Risk for Nonadherence. *Transplantation, Volume 85*, pp. 700-706.

Torgesesn, J., Meadows, J. G., & Howard, P. (2006). *Using student data to help guide professional development and teacher support: Issuers for Reading First and K-12 reading plans*. Tallahassee, FL: Florida Center for Reading and Research

U.S. Census Bureau. (2011). *Statistical Abstract of the United States: 2012* (131st ed.). Retrieved from http://www.census.gov/compendia/statab

U.S. Department of Education, Data Analysis System. (2008, July 15). (OMB #1820-0518). *Personnel employed (FTE) to provide special education and related services to children and students. Ages 3 through 21 under IDEA, Part B, by personnel type, certification status and state: Fall 2005*. Retrieved from http://www.ideadata.org/tables30th%5Car_3-3.htm

U.S. Department of Education, National Center for Education Statistics. (2011a). *Mathematics 2011: National Assessment of Educational Progress at grades 4 and 8* (NCES: 2012-458). Retrieved from http://nces.ed.gov/nationsreportcard/pdf/main2011/2012458.pdf

U.S. Department of Education, National Center for Education Statistics. (2011b). *Reading 2011: National Assessment of Educational Progress at grades 4 and 8* (NCES: 2012-457). Retrieved from http://nces.ed.gov/nationsreportcard/pdf/main2011/2012457.pdf

Valenta, A. L., & Wigger, U. (1997). Q-methodology: Definition and application in health care informatics. *Journal of the American Medical Informatics Association, 4,* 501-210.

Van Exel, J., & de Graaf, G. (2005*). Q methodology: A sneak preview*. Retrieved from http://qmethod.org/articles/vanExel.pdf

Vaughn, S., & Dammann, J. E. (2001). Science and sanity in special education. *Behavioral Disorders, 27,* 21-29.

Vescio, V., Ross, D., & Adams, A. (2008). A review of research on the impact of professional learning communities on teaching practice and student learning. *Teaching and Teacher Education, 24,* 80–91.

Watts, S., & Stenner, P. (2005). Doing Q methodology: Theory, method and interpretation. *Qualitative Research in Psychology, 2,* 67-91.

Watts, S., & Stenner, P. (2012). *Doing Q methodological research: Theory, method & interpretation*. Thousand Oaks, CA: Sage Publications Inc.

Webler, T., Danielson, S., & Tuler, S. (2009). *Using Q method to reveal social perspectives in environmental research*. Retrieved from Social and Environmental Research Institute website: www.serius.org/pubs/Qprimer.pdf

Wei, R. C., Darling-Hammond, L., & Adamson, F. (2010). *Professional development in the United States: Trends and challenges*. Retrieved from the Learning Forward website: http://www.learningforward.org

Wood, A. (2005). The importance of principals: Site administrators' roles in novice teacher induction. *American Secondary Education, 33*(2), 39–63.

Yoon, K. S., Duncan, T. Lee, S. W-Y., Scarloss, B., & Shapley, K. L. (2007). *Reviewing the evidence on how teacher professional development affects student achievement* (Issues & Answers Report, REL 2007–No. 033). Retrieved from U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Southwest: http://ies.ed.gov/ncee/edlabs

Youngs, P., Jones, N., & Low, M. (2011). How beginning special and general education elementary teachers negotiate role expectations and access to professional resources. *Teachers College Record*, *113*, 1506–1540.

Zabala, A. (2014). Qmethod: A package to explore human perspectives using Q methodology. *The R Journal*, *6*, 163-173.

APPENDICES

Appendix A: Literature Review

Table A1

References of documents contributing to the concourse; per type (i.e., research, review/summary, theoretical), publication (i.e., conference paper, book, government report, peer-reviewed article, professional publication), and education population described (i.e., both general and special education teachers and/or students, general education only, special education only, not indicated).

#	Type[a]	Pub[b]	Ed[c]	Reference
1	RE	PR	MIX	Algozzine, B., Wang, C., White, R., Cooke, N., Marr, M. B., Algozzine, K., ... & Duran, G. Z. (2012). Effects of multi-tier academic and behavior instruction on difficult-to-teach students. *Exceptional Children, 79*, 45-64.
2	SUM	PP	MIX	Archibald, S., Coggshall, J. G., Croft, A., & Goe, L. (2011). *High-quality professional development for all teachers: Effectively allocating resources*. Retrieved from the National Comprehensive Center for Teacher Quality website: http://www.tqsource.org/publications/HighQualityProfessionalDevelopment.pdf
3	SUM	PR	GE	Avalos, B. (2011). Teacher professional development in *Teaching and Teacher Education* over ten years. *Teaching and Teacher Education, 27,* 10-20.
4	RE	PR	MIX	Barton, E. E., & Wolery, M. (2010). Training teachers to promote pretend play in young children with disabilities. E*xceptional Children, 77,* 85-106.
5	RE	PP	GE	Blank, R. K. & de las Alas, N. (2009). Effects of teacher professional development on gains in student achievement: How meta-anaylsis provides evidence useful to education leaders. Retrieved from the Council of Chief State School Officers website: http://www.ccsso.org
6	SUM	PP	SE	Billingsley, B. S., Griffin, C. C., Smith, S. J., Kamman, M., & Israel, M. (2009). *A review of teacher induction in special education: Research, practice, and technology solutions* (NCIPP Doc. No. RS-1ES). Retrieved from National Center to Inform Policy and Practice in Special Education Professional Development website: http://ncipp.org/reports/rs_1es.pdf
7	RE	PR	SE	Bishop, A. G., Brownell, M. T., Klingner, J. K., Leko, M. M., & Galman, S. A. C. (2010). Differences in beginning special education teachers: The influence of personal attributes, preparation, and school environment on classroom reading practices. *Learning Disability*

Quarterly, *33*, 75-92.

8	RE	CF	SE	Boardman, A. G., Brownell, M. T., Prichard, B., Osipova, A., & Dingle, M. P. (2010, May). *Special education teacher change in response to professional development in fluency and decoding.* Paper presented at the 2010 annual meeting of the American Educational Research Association, Denver, CO. Retrieved from the AERA Online Paper Repository website: http://www.aera.net
9	RE	GT	MIX	Boe, E. E., Cook, L. H., & Sunderland, R. J. (2008). *Teacher qualifications and turnover: Bivariate associations with various aspects of teacher preparation, induction, mentoring, extra support, professional development, and workload factors for early career teachers in special and general education. (*Data Analysis Report No. 2008-DAR1). Retrieved from The University of Pennsylvania Center for Research and Evaluation in Social Policy website: http://www.gse.upenn.edu/cresp/pdfs/DAR1-mss1.pdf
10	RE	GT	MIX	Boe, E. E., Cook, L. H., & Sunderland, R. J. (2008). *Teacher qualifications and turnover: Bivariate associations with various aspects of teacher preparation, induction, mentoring, extra support, professional development, and workload factors for early career teachers in special and general education* (Data Analysis Report No. 2008-DAR1). Retrieved from The University of Pennsylvania Center for Research and Evaluation in Social Policy website: http://www.gse.upenn.edu/cresp/pdfs/DAR1-mss1.pdf
11	RE	PR	SE	Browder, D. M., Jimenez, B. A., Mims, P. J., Knight, V. F., Spooner, F., Lee, A., & Flowers, C. (2012). The effects of a "Tell-Show-Try-Apply" professional development package on teachers of students with severe developmental disabilities. *Teacher Education and Special Education*, *35*, 212-227. doi: 10.1177/0888406411432650
12	RE	CF	SE	Brownell, M. T., Dingle, M. P., Lauterbach, A., Boardman, A. G., Leko, M., & Madison, J. E. (2010, May). *Individual and contextual factors influencing special education teacher learning in literacy learning cohorts.* Paper presented at the 2010 annual meeting of the American Educational Research Association, Denver, CO. Retrieved from the AERA Online Paper Repository website: http://www.aera.net
13	SUM	BK	MIX	Brownell, M. T., Lauterbach, A., & Bene, A. (2012). Preparing teachers to effectively deliver reading instruction and beahvioral supports in response to intervention frameworks. In B. G. Cook, M. Tankersley, & T. J. Landrum (Eds.) *Advances in Learning and Behavioral Disabilities: Classroom Behavior, Contexts, and Interventions* (Vol. 25, pp. 247-277). doi: 10.1108/S0735-004X(2012)0000025013

14	SUM	BK	MIX	Brownell, M.T., Leko, M.M., Kamman, M., & King, L. (2008). Defining and preparing high quality teachers in special education: What do we know from the research? In T. E. Scruggs & M. A. Mastropieri (Eds.), *Advances in Learning and Behavioral Disabilities: Personnel Preparation* (Vol. 21, pp. 35–74). doi: 10.1016/S0735-004X(08)00002-5
15	RE	PR	NI	Camburn, E. M. (2010). Embedded teacher learning opportunities as a site for reflective practice: An exploratory study. *American Journal of Education, 16,* 463–489.
16	SUM	PP	MIX	Coggshall, J. G. (2012). *Toward the effective teaching of new college- and career-ready standards: Making professional learning systemic*. Retrieved from National Comprehensive Center for Teaching Quality website at http://www.tqsource.org/publications/TowardEffectiveTeaching.pdf
17	RE	PP	MIX	Darling-Hammond, L., Wei, R. C., Andree, A., Richardson, N., & Orphanos, S. (2009). *Professional learning in the learning profession: A status report on teacher development in the United States and abroad.* Retrieved from the Learning Forward website at http://www.learningforward.org/docs/pdf/nsdcstudytechnicalreport2009.pdf
18	SUM/TH	PR	GE	Desimone, L. M. (2009). Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. *Educational Researcher, 38,*181–99.
19	SUM	PR	GE	Desimone, L. M. (2011). A primer on effective professional development. *Phi Delta Kappan, 92*(6), 68-71.
20	RE	PR	SE	Dingle, M. P., Brownell, M. T., Leko, M. M., Boardman, A. G., & Haager, D. (2011). Developing effective special education reading teachers: The influence of professional development, context, and individual qualities. *Learning Disability Quarterly, 34I,* 87-103.
21	TH	PR	SE	Dorn, S. (2010). The political dilemmas of formative assessment. *Exceptional Children, 76, 3,* 325-337.
22	RE	PR	MIX	Given, H., Kuh, L., LeeKeenan, D. Mardell, B., Redditt, S., & Twombly, S. (2010). Changing school culture: Using documentation to support collaborative inquiry. T*heory into Practice, 49,* 36–46. doi: 10.1080/00405840903435733
23	SUM	PP	MIX	Goe, L. (2009). *America's opportunity: Teacher effectiveness and equity in K-12 classrooms*. Retrieved from The Center on Great Teachers and Leaders website: http://www.gtlcenter.org/
24	RE	PR	MIX	Gregory, A. (2010). Teacher learning on problem-solving teams. *Teaching and Teacher Education, 26,* 608–615. doi:10.1016/j.tate.2009.09.007
25	SUM	PR	GE	Guskey, T. R., Yoon, K. S. (2009). What works in professional development? *Phi Delta Kappan, 90,* 495-500.

26	RE	CF	SE	Haager, D. S., Klingner, J. K., Dingle, M. P., Brownell, M. T., & Osipova, A. (2010, May). *The impact of reading curriculum on special education teachers' word study and fluency instruction.* Paper presented at the 2010 annual meeting of the American Educational Research Association, Denver, CO. Retrieved from the AERA Online Paper Repository website: http://www.aera.net
27	SUM/TH	PR	MIX	Hochberg, E. D., & Desimone, L. M. (2010). Professional development in the accountability context: Building capacity to achieve standards. *Educational Psychologist, 45,* 89-106.
28	RE	PP	MIX	Jaquith, A., Mindleh, D., Wei, R. C., & Darling-Hammond, L. (2010). *Teacher professional development in the United States: Case studies of state policies and strategies*. Retrieved from Learning Forward's website at http://www.learningforward.org/docs/pdf/2010phase3report.pdf
29	TH	PR	SE	Kaufman, R. C., & Ring, M. (2011). Pathways to leadership and professional development: Inspiring novice special educators. *Teaching Exceptional Children, 43*(5), 52-60.
30	RE	PR	MIX	Kosko, K. W., & Wilkins, L. M. (2009). General educators' in-service training and their self-perceived ability to adapt instruction for students with IEPs. *The Professional Educator, 33*(2), 14-23.
31	SUM	PR	MIX	Kretlow, A. G., & Bartholomew, C. C. (2010). Using coaching to improve the fidelity of evidence-based practices: A review of studies. *Teacher Education and Special Education, 33,* 279-299. doi: 10.1177/0888406410371643
32	TH	PP	GE	Learning Forward. (2011). *Standard for professional learning.* Oxford, OH: Author.
33	SUM	PR	SE	Leko, M. M., & Bronwell, M. T. (2009). Crafting quality professional development for special educators: What school leaders should know. *Teaching Exceptional Children, 42,* 64-70.
34	RE	PR	MIX	Levine, T.H., & Marcus, A. S. (2010). How the structure and focus of teachers' collaborative activities facilitate and constrain teacher learning. *Teaching and Teacher Education, 26*, 389–398. doi:10.1016/j.tate.2009.03.001
35	RE	PR	GE	Marra, R. M., Arbaugh, F., Lannin, J., Abell, S., Ehlert, M., Smith, R., & Merle, D. (2009). Orientations to professional development design and implementation: Understanding their relationship to PD outcomes across multiple projects. *International Journal of Science and Mathematics Education, 9,* 793-816.
36	SUM	PR	MIX	McLeskey, J. (2011). Supporting improved practice for special education teachers: The importance of learner-centered professional development. *Journal of Special Education Leadership, 24,* 26-35.

37	TH	PP	NI	Mizell, H. (2010). *Why professional development matters*. Retrieved from the Learning Forward website: www.learningforward.org
38	TH	PR	SE	Odom, S. L. (2009). The tie that binds: Evidence-based practice, implementation science, and outcomes for children. *Early Childhood Special Education, 29,* 53-61.
39	SUM	PP	SE	O'Gorman, E., & Drudy, S. (2011). *Professional development for teachers working in special education/inclusion in mainstream schools: The views of teachers and other stakeholders.* Retrieved from the National Council for Special Education website: http://www.ncse.ie/
40	RE	PR	SE	Osipova, A., Prichard, B., Boardman, A. G., Kiely, M. T., & Carroll, P. E. (2011). Refocusing the lens: Enhancing elementary special education reading instruction through video self-reflection. *Learning Disabilities Research & Practice, 26,* 158-171.
41	RE	PR	NI	Parise, L. M., &Spillane, J. P. (2010). Teacher learning and instructional change: How formal and on-the-job learning opportunities predict change in elementary school teachers' practice. *The Elementary School Journal, 110,* 323–346.
42	SUM	PP	SE	Rosenberg, M. S., Brownell, M., McCray, E. D., deBettencourt, L. U., Leko, M., & Long, S. (2009). *Development and sustainability of school-university partnerships in special education teacher preparation: A critical review of the literature* (NCIPP Doc. No. RS-3). Retrieved from the National Center to Inform Policy and Practice in Special Education Professional Development website: http://ncipp.org/reports/rs_3.pdf
43	SUM	PR	SE	Sidelar, P. T., Brownell, M. T., & Billingsley, B. (2010). Special education teacher education research: Current status and future directions. *Teacher Education and Special Education, 33,* 8-24. doi: 10.1177/0888406409358593
44	RE	PR	MIX	Strieker, T., Logan, K., & Kuhel, K. (2012). Effects of job-embedded professional development on inclusion of students with disabilities in content area classrooms: Results of a three-year study. *International Journal of Inclusive Education, 16,* 1047-1065.
45	RE	PR	MIX	van Garderen, D., Hanuscin, D., Lee, R., & Kohn, P. (2012). Quest: A collaborative professional development model to meet the needs of diverse learners in K-6 science. *Psychology in the Schools, 49,* 429-443. doi: 10.1002/pits.21611
46	RE	PP	MIX	Wei, R. C., Darling-Hammond, L., & Adamson, F. (2010). *Professional development in the United States: Trends and challenges*. Retrieved from the Learning Forward website at http://www.learningforward.org/docs/pdf/nsdcstudytechnicalreport2010.pdf
47	SUM	PR	GE	Witcomb, J., Borko, H., & Liston, D. (2009). Growing talent: Promising professional development models and practices. *Journal of Teacher Education, 60,* 207-2012.

[a]Type: Type of document; theoretical (TH; contains new or established principles related but no original research or experimental data), research (RE; results from one or more empirical studies, written by person(s) who conducted the research), summary (SUM; reviews results to identify trends or broader conclusions of research studies, referencing primary sources)
[b]Pub: Publication; conference paper (CF), book (BK), government report (GR), peer-reviewed (PR), professional publication (PP)
[c]Ed: Education; both general and special education teachers and/or students (MIX), general education teachers and/or students only (GEN), special education teachers and/or students only (SE), not indicated (NI)

Appendix B: Q Deck

Card Number	Q Statement
1	Includes participants from the same school **and/or** who teach the same grade or subject.
2	Includes positive relationships between the participants and PL provider(s).
3	Includes participants implementing the new practices in their own school/classroom.
4	Includes school/district leaders aligning calendars, schedules, and structures to support the PL program.
5	Includes active learning experiences with practice and feedback.
6	Includes opportunities for collaboration amongst the participants.
7	Includes adequate time to participate in the PL program.
8	Includes sustained follow-up and support (e.g., coaching, booster-sessions, etc.) to help implement new practices in the school/classroom.
9	Includes school/district leaders providing the necessary resources (e.g., time, staff, materials, etc.) for the PL program and implementation.
10	Includes modeling, demonstrations, and video of the new information and skills.
11	Includes teachers meeting regularly (e.g., weekly, bi-weekly, etc.).
12	Includes technology to deliver information, ease networking and communication, and enhance classroom instruction.
13	Includes observing and providing constructive feedback to other participants.
14	Includes person(s) as PL provider(s) from outside the school district.
15	Includes working with participants' actual student data and lesson plans to practice the new information and skills.
16	Includes participants problem-solving classroom issues in a structured format (e.g., data analysis, planning intervention, implementation, and evaluation).
17	Includes planning the PL program based on students' needs (e.g., grades, classwork, discipline, standardized assessments, etc.).
18	Includes participants who listen and respectfully communicate with each other.
19	Includes person(s) as PL provider(s) from inside the school district.
20	Includes participants choosing whether they want to participate in the PL program (i.e., without pressure or consequence for choice).
21	Includes promoting a culture of collective responsibility, where all participants are responsible for the success of the PL program.
22	Includes planning the PL program based on teachers' needs (e.g., needs assessment, evaluations, goals, etc.).
23	Includes PL content that is consistent with school/district standards, goals and other initiatives.
24	Includes all PL providers having a high level of expertise on the topic.
25	Includes occurring over an extended period of time.
26	Includes building a professional network among participants to help support and sustain new practices.

Card Number	Q Statement
27	Includes being modified to meet the unique characteristics of the school/district (e.g., procedures, leadership, resources, etc.).
28	Includes building on participants' prior experiences, beliefs, and knowledge.
29	Includes all PL provider(s) having good communication and relationship skills.
30	Includes frequent sessions.
31	Includes opportunities and training for participants to serve in leadership roles (e.g., train the trainer).
32	Includes making ongoing adjustments throughout the PL program using a variety of data (e.g., participants' reactions, learning, and implementation and student outcomes).
33	Includes being aligned with teacher performance standards (e.g., licensing standards, evaluations, etc.).
34	Includes learning how to align instruction and interventions with curriculum standards and statewide assessments.
35	Includes learning how students learn that content.
36	Includes school leaders participating in the PL program with other staff members (e.g., teachers, coaches, etc.).
37	Includes assessing the overall effectiveness of the PL program using a variety of data (e.g., participants' reactions, learning, implementation, and student outcomes).
38	Includes being research-based with evidence linking practices to student learning.
39	Includes participants who are motivated to change instructional practices.
40	Includes learning specific interventions to use with struggling students.
41	Includes school leaders cultivating a positive culture and collaborative relationships between general and special education teachers.
42	Includes opportunities for participants to reflect on their practice (e.g., through group discussion, portfolios, etc.).
43	Includes learning how to identify students' needs and then monitor progress.
44	Includes learning subject-matter content.
45	Includes adequate time to implement the PL program.

Appendix C: Sampling Information

Table: C1

Demographics of School Systems in the Metropolitan Area as described by the SESS

School District	SESS State-Funded Agency	County Population[b]	People Per Square Mile[b]	All Student Enrollment	Students with Disabilities Enrollment
Kudo	MetroEast	691893	2685.7	95481	8204
Crow City[a]	MetroEast	---	---	2894	294
Leopard	MetroEast	920581	1748.0	89920	9347
Lion City[a]	MetroWest	---	---	48805	4333
Insect	MetroEast	805321	1871.2	159814	17617
Ferret City[a]	MetroEast	---	---	3195	349
Chipmuck	MetroEast	85215	656.5	15582	1310
Advark	MetroWest	259424	1832.5	49551	4779
Bear	MetroWest	688078	2026.4	106619	12280
Rhino City[a]	MetroWest	---	---	8010	808
Urchin	MetroWest	132403	661.8	24452	2569
Rabbit	MetroWest	175511	783.5	35650	4069
Toad	MetroSouth	23655	128.3	3566	467
Yaffle	MetroSouth	106567	548.3	21069	1744
Newt	MetroSouth	203922	633.0	40695	5285
Mink	MetroSouth	18317	99.8	2449	283
Weasel	MetroSouth	99598	367.3	18834	2413
Kid	MetroSouth	17869	82.7	3437	245
Ibex	MetroSouth	64073	326.1	10242	1052
Octopus	MetroSouth	27153	84.0	4495	466
Metro Total		**3758426**		**639973**	**65959**

[a] Independent school district

[b] From the 2010 Census

Sampling of Consumers (18 to 20 total)

Years of Experience	Novice or <5 recent years as SETs (min 3 SETs)	Experienced or ≥5 recent years as SETs (min 3 SETs)
	1. Participant ID	*1. Participant ID*
	2. Participant ID	*2. Participant ID*
	3. Participant ID	*3. Participant ID*
Certification	Traditional (min 3 SETs)	Alternative (min 3 SETs)
	1. Participant ID	*1. Participant ID*
	2. Participant ID	*2. Participant ID*
	3. Participant ID	*3. Participant ID*
Grade-level	Elementary School (min 3 SETs)	Secondary School (min 3 SETs)
	1. Participant ID	*1. Participant ID*
	2. Participant ID	*2. Participant ID*
	3. Participant ID	*3. Participant ID*

Number of SETs from districts within each of the three Metro SESS*	**Metro East** (Kudo, Leopard, Insect, Ferret, Chipmuck, Crow)	**Metro South** (Toad, Yaffle, Newt, Mink, Weasel, Kid, Ibex, Octopus)	**Metro West** (Lion City, Advark, Bear, Rhino City, Urchin, Rabbit)
**Keep similar to number of PLPs from each of the three Metro SESS*	≈ _#_ SETs from Metro East school districts (i.e., _#_ PLPs)	≈ _#_ SETs from Metro South school districts (i.e., _#_ PLPs)	≈ _#_ SETs from Metro West school districts (i.e., _#_ PLPs)

Figure C1. Proposed Maximum Variation Sampling of SET Participants. The sampling cells were used to ensure maximum variation of participants according to specified characteristics. Characteristics include: years of experience (i.e., "novice" or "experienced"), certification (i.e., traditional or alternative), grade-level taught, and county currently working (i.e., associated Metro SESS agency).

Sampling of Consumers (18 to 20 total)

Years of Experience	Novice or <5 recent years as SETs (min 3 SETs)	Experienced or ≥5 recent years as SETs (min 3 SETs)
	1.2012BAR	1.1990MAZ
	2.2006WIL	2.1979CHA
	3.2012EDM	3.1978WAR
Certification	Traditional (min 3 SETs)	Alternative (min 3 SETs)
	1.2001BRA	1. 1974NOL
	2.2008RIV	2.1989LOY
	3.1993THR	3.1996LEY
Grade-level	Elementary School (min 3 SETs)	Secondary School (min 3 SETs)
	1.1999PER	1.2013THA
	2.1994BRA	2.2009TAK
	3.2001PHI	3.2010FIT

Number of SETs from districts within each of the three Metro SESS*	**Metro East** (Kudo, Leopard, Insect, Ferret, Chipmuck, Crow)	**Metro South** (Toad, Yaffle, Newt, Mink, Weasel, Kid, Ibex, Octopus)	**Metro West** (Lion City, Advark, Bear, Rhino City, Urchin, Rabbit)
**Keep similar to number of PLPs from each of the three Metro SESS*	≈ **9** SETs from Metro East school districts (i.e., ***8.5*** PLPs)	≈ **2** SETs from Metro South school districts (i.e., ***1.5*** PLPs)	≈ **7** SETs from Metro West school districts (i.e., ***7*** PLPs)

Figure C2. Actual Maximum Variation Sampling of Consumer Participants. The sampling cells were used to ensure maximum variation of participants according to specified characteristics. Characteristics include: years of experience (i.e., "novice" or "experienced"), certification (i.e., traditional or alternative), grade-level taught, and county currently working (i.e., associated Metro SESS agency). All SET participants (i.e., Consumers) fit into one box of the sampling chart.

Appendix D: Study Materials

Recruitment for SETs

Handout given to SETs attending a PL program at one of the three metropolitan area regional agencies

STUDY INVITATION

Study Description:
This is a study on the critical features of professional learning (PL; i.e., professional development) for special education teachers. Seeking current special education teachers to rank-order statements about PL from most important to least important. You will also be interviewed about your ordering of certain statements. You will interact in a one-on-one setting with a graduate student researcher in this study. All responses will be anonymous and kept confidential. This study will take no more than one hour of your time at a date and location that is convenient for you. You will be given $10 gift card to a national bookstore for your participation.

Criteria to participate: Currently practicing special education teachers who have been employed as a special education teacher for more than one full school year and have participated in at least one PL program as a special education teacher are eligible to participate in the study.

Contact: If interested, please contact Allison Schwartz, Ed.S. at aschwartz1@student.gsu.edu.

Email to special education directors to recruit special education teachers

Dear ___ (Special Education Director)

I am a doctoral student in the school psychology program at Georgia State University. I am doing my dissertation on the critical features of professional learning (PL; i.e., professional development) for special education teachers. This study has been approved by the Georgia State University Institutional Review Board (IRB) and I am writing to request that you forward the study invitation below to the special education teachers in your county.

Your assistance would be greatly appreciated. Thank you in advance for your time and consideration in the matter.

With gratitude,
Allison J. Schwartz, Ed.S.

STUDY INVITATION

Study Description:
This is a study on the critical features of professional learning (PL; i.e., professional development) for special education teachers. Seeking current special education teachers to rank-order statements about PL from most important to least important. You will also be interviewed about your ordering of certain statements. You will interact in a one-on-one setting with a graduate student researcher in this study. All responses will be anonymous and kept confidential. This study will take no more than one hour of your time at a date and location that is convenient for you. You will be given $10 gift card to a national bookstore for your participation.

Criteria to participate: Currently practicing special education teachers who have been employed as a special education teacher for more than one full school year and have participated in at least one PL program as a special education teacher are eligible to participate in the study.

Contact: If interested, please contact Allison Schwartz, Ed.S. at aschwartz1@student.gsu.edu.

Recruitment Email for Special Education PL Providers

Special Education PL Providers:
Email to State Agency Directors to Recruit Special Education PL Providers

Dear ___ (State Agency Director)

I am a doctoral student in the school psychology program at Georgia State University. I am doing my dissertation on the critical features of professional learning (PL; i.e., professional development) for special education teachers. This study has been approved by the Georgia State University Institutional Review Board (IRB) and I am writing to request that you forward the study invitation below to your staff who provides PL to educators, including special education teachers.

Your assistance would be greatly appreciated. Thank you in advance for your time and consideration in the matter.

With gratitude,
Allison J. Schwartz, Ed.S.

STUDY INVITATION

Study Description:
This is a study on the critical features of professional learning (PL; i.e., professional development) for special education teachers. I am seeking current PL providers to rank-order statements about PL from most important to least important. You will also be interviewed about your ordering of certain statements. You will interact in a one-on-one setting with a graduate student researcher in this study. All responses will be anonymous and kept confidential. This study will take no more than one hour of your time at a date and location that is convenient for you. You will be given $10 gift card to a national bookstore for your participation.

Criteria to participate: Currently practicing PL providers who have been employed as PL providers for more than one full school year and helped facilitate PL that included special educators are eligible to participate in this study.

Contact: If interested, please contact Allison Schwartz, Ed.S. at aschwartz1@student.gsu.edu.

Researcher Script

Study Overview:

This study is entitled "Special Education Teachers' and Professional Learning Providers' Perspectives of the Features of Effective Professional Learning: A Q Methodological Study". It is a research study about professional learning, PL or also called professional development, in special education. We are investigating what special education teachers' and special education PL providers' believe are the critical features of effective PL in special education. For this study, effective PL is defined as PL that results in participants successfully using the content in their school setting.

You will interact in a one-on-one setting with me, a graduate student researcher, and I will ask you to rank-order many statements about PL from most to least important. After, I will interview you about your ordering of certain statements. This interview will be tape recorded if you give permission. After the interview, you will complete a demographic survey. Your participation in this study is voluntary. All responses are confidential. A participant generated code will be used on all study records rather than your name. Any findings will be summarized and reported in group form, and your name and other facts that might point to you will not appear when we present this study or publish its results.

This study will take no more than one hour of your time. You will be given $10 gift card to a national bookstore for your participation regardless of if you complete the study. There are no known risks to your participation in this study. The benefits to you may include some satisfaction about contributing to the knowledge about PL for special education.

Do you have any questions or concerns?

Directions for Consent

Here are two copies of the consent form for this research study and a pen. Please read through the consent form carefully and, if you decide to participate, sign both copies. One copy you will give to me and the other is for you to keep.

Directions for Completing the Participant Generated Code Form:

To protect the confidentiality of participants, you will create a personal code that will be used on all data collection instruments in place of any identifying information. Here is the Participant Generated Code Form; please complete this form to create your unique seven-digit identification code. You will keep the completed form and write your seven-digit identification code on all subsequent data collected.

Directions for Sorting

Please take the materials out of the large manila envelope and account for the following items: white envelope with a deck of 45 laminated cards, each with a statement printed on it pertaining to PL; a Form Board; a Demographic Questionnaire; a Record Sheet with a figure printed on it that looks like the Form Board in miniature; a pencil; a permanent marker; and, a cassette. Now I am going to give you step-by-step instructions on how to sort the laminated cards. *Remember *PL* means professional learning (i.e., professional development). *PL provider* refers to the facilitator of the PL program and *participants* refer to the people participating in the PL program.

Step 1. Pick up the deck of cards and read through them to familiarize yourself with the statements. All cards contain a statement about PL.

Step 2. Read each card again, and sort them into **three (3)** piles:

(1) A pile on the *right* for statements that you think are MOST IMPORTANT to special education teachers successfully using the content from their PL experiences in the school setting.

(2) A pile on the *left* for statements that you think are LEAST IMPORTANT to special education teachers successfully using the content from their PL experiences in the school setting.

(3) A pile in the *middle* for statements that you think are NEUTRAL and neither important or unimportant to special education teachers being able to successfully using the content from their PL experiences in the school setting.

Step 3. Now that you have three piles place the Form Board on the table above the three piles.

Step 4. Look at the cards from the "MOST" pile on the right and read them again. Select 2 cards that are MOST important to special education teachers using the content from PL experiences in the school setting and place them in the +5 column on the *right* side of the Form Board.

Step 5. Look at the cards from the "LEAST" pile on the left and read them again. Select 2 cards that are LEAST important to special education teachers using the content from PL experiences in the school setting and place them in the -5 column on the *left* side of the Form Board.

Step 6. Go back to the "MOST" pile and read them again. Select 2 cards from those remaining that are "MOST" important to special education teachers using the content from PL experiences in the school setting and place them in the +4 column on the Form Board.

Step 7. Go back to the "LEAST" pile and read them again. Select 2 cards from those remaining that are "LEAST" important to special education teachers using the content from PL experiences in the school setting and place them in the -4 column on the Form Board.

Step 8. Keep going back and forth between the MOST and LEAST piles until all the cards have been placed on the board.

Step 9. Now, read through your "NEUTRAL" pile and place them in the remaining spaces you feel are most appropriate on the Form Board.

Step 10. Once all the cards have been placed on the Form Board, feel free to rearrange the cards until the arrangement best represents your perspective about what is important to special education teachers using the content from their PL experiences in the school setting.

Post-Sort Interview:
Congratulations, you finished ranking the cards and you should now have a complete sort in front of you. Have one final look at the whole sort and feel free to make any final adjustments.

Now, I am going to interview you and ask some questions about the sort you just completed. I will be taking notes during the interview, but I cannot write fast enough to get down everything you say. So, as mentioned in the introduction and consent form, with your permission, I will tape record this interview as well as take notes. Again, your name will not be recorded or written on the cassette. Do you have any questions?

Please use the permanent marker to write your participant generated code on the cassette tape and the pen to write your code on the post-sort interview questions sheet, which I will use to take notes.

(*Refer to the Post-Sort Interview Question sheet for the actual interview questions)*

Demographic Questionnaire:
Thank you for answering some questions about your sort. Please write your participant generated code on the top of the Record Sheet, which I will use to record the number on each card from the Form Board. While I am recording your sort, please complete the two-sided Demographic Questionnaire.

Thank you for taking for your time and help!

Georgia State University
Department of Counseling and Psychological Services
Informed Consent—Special Education Teachers

Title: Special Education Teachers' and Professional Learning Providers' Perspectives of the Features of Effective Professional Learning: A Q Methodological Study

Principal Investigator: Stephen Truscott, Ph.D.
Investigator: Allison Schwartz, Ed.S. (Student PI)

I. Purpose: You are invited to participate in a research study about professional learning (PL; i.e., also known as professional development). The purpose of the study is to investigate special education teachers' and special education PL providers' perspectives about the features of effective PL for special education. For this study, *effective PL* is defined as PL that results in participants successfully using the content in the school setting. You are eligible to participate because you: (a) are currently employed as special education teacher for more than one full school year; (b) are currently employed in one of the following school districts in the Atlanta metropolitan area: Atlanta, Buford, Butts, City, Cobb, Clayton, Decatur City, Dekalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Lamar, Marietta City, Newton, Pike, Rockdale, Spaulding, and Upson; (c) have participated in at least one PL program in current position; and, (d) are willing to provide perspectives related to the important factors of effective PL for special education. A total of 40 participants will be invited to participate in this study. The entire study will take about 1 hour of your time over one session at a date of your convenience. You will receive a $10 gift card to a national bookstore for your time, even if you end the study early.

II. Procedures: If you decide to participate in this study, a graduate student researcher from Georgia State University (GSU) will meet with you to complete the research activities. The research activities focus on your perspectives of the features of effective PL for special educators. You will be asked to read a number of statements about features of PL and sort them into categories. You will also be interviewed, and asked about the cards given extreme rankings, if any features of PL were missing, and if there were problems with any of the statements. With your permission, the researcher will take notes and audio record the interview. Your name will not be recorded. You will also be asked to complete a paper-and-pencil demographic information questionnaire.

III. Risks: In this study, you will not have any more risks than you would in a normal day of life, and we expect that it will be a positive experience for you. However, if any part of the study makes you feel uncomfortable, we can provide you with the name of someone to talk to about this. You will be responsible for any costs associated with potential referrals.

IV. Benefits: Participation in this study may benefit you personally. Participation in the

research may include some satisfaction about contributing to the knowledge about PL for special education. Overall, we hope to gain information about the important features of effective PL that will assist educators in appropriate decision making regarding PL programs and associated resources, such as personnel and funds. Establishing effective, informed and researched-based PL practices for educators will allow more efficient use of valuable educational resources including money, time, and effort.

V. Voluntary Participation and Withdrawal: Participation in research is voluntary. You do not have to be in this study. If you decide to be in the study and change your mind, you have the right to drop out at any time. You may skip questions or stop participating at any time. Whatever you decide, you will not lose the $10 gift card.

VI. Confidentiality: We will keep your records private to the extent allowed by law. We will use a participant generated identification code rather than your name on study records. Only the principal investigator, Dr. Stephen Truscott, and investigator, Allison Schwartz, will have access to the information you provide. Information may also be shared with those who make sure the study is done correctly (GSU Institutional Review Board, the Office for Human Research Protection (OHRP). The information you provide will be kept confidential. Data will be stored in a locked cabinet in the GSU office of the principal investigator. All computer files and emails will be stored on a computer with password access and firewall protection. Your name and other facts that might point to you will not appear when we present this study or publish its results. The findings will be summarized and reported in group form. You will not be identified personally.

VII. Contact Persons: Contact the faculty principal investigator, Dr. Stephen Truscott at (404) 413-8010 or sdt55@gsu.edu if you have questions about this study. You may also contact the investigator, Allison Schwartz, School Psychology Doctoral Student, at (404) 735-9695 or aschwartz1@student.gsu.edu with quesitons regarding this study. If you have questions or concerns about your rights as a participant in this research study, you may contact Susan Vogtner, Senior IRB Compliance Specialist, in the Office of Research Integrity at (404) 413-3513 or svogtner1@gsu.edu.

VIII. Copy of Consent Form to Subject: We will give you a copy of this consent form to keep. If you are willing to volunteer for this research, please sign below.

_____ _____

Participant Date

_____ _____

Principal Investigator or Investigator Obtaining Consent Date

Georgia State University
Department of Counseling and Psychological Services
Informed Consent—Special Education Professional Learning (PL) Providers

Title: Special Education Teachers' and Professional Learning Providers' Perspectives of the Features of Effective Professional Learning: A Q Methodological Study

Principal Investigator: Stephen Truscott, Ph.D.
Investigator: Allison Schwartz, Ed.S. (Student PI)

IX. Purpose: You are invited to participate in a research study about professional learning (PL; i.e., also known as professional development). The purpose of the study is to investigate special education teachers' and special education PL providers' perspectives about the features of effective PL for special education. For this study, *effective PL* is defined as PL that results in participants successfully using the content in the school setting. You are eligible to participate because you: (a) are currently employed as a special education PL provider for more than one full school year; (b) in your current position, currently work in one of the following school districts in the Atlanta metropolitan area: Atlanta, Buford, Butts, City, Cobb, Clayton, Decatur City, Dekalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Lamar, Marietta City, Newton, Pike, Rockdale, Spaulding, and Upson; (c) in your current position, have helped facilitate at least one PL program that included special education teachers; and, (d) willing to provide perspectives related to the important factors of effective PL for special education. A total of 40 participants will be invited to participate in this study. The entire study will take about 1 hour of your time over one session at a date of your convenience. You will receive a $10 gift card to a national bookstore for your time, even if you end the study early.

X. Procedures: If you decide to participate in this study, a graduate student researcher from Georgia State University (GSU) will meet with you to complete the research activities. The research activities focus on your perspectives of the features of effective PL for special educators. You will be asked to read a number of statements about features of PL and sort them into categories. You will also be interviewed, and asked about the cards given extreme rankings, if any features of PL were missing, and if there were problems with any of the statements. With your permission, the researcher will take notes and audio record the interview. Your name will not be recorded. You will also be asked to complete a paper-and-pencil demographic information questionnaire.

XI. Risks: In this study, you will not have any more risks than you would in a normal day of life, and we expect that it will be a positive experience for you. However, if any part of the study makes you feel uncomfortable, we can provide you with the name of someone to talk to about this. You will be responsible for any costs associated with potential referrals.

XII. Benefits: Participation in this study may benefit you personally. Participation in the research may include some satisfaction about contributing to the knowledge about PL for special education. Overall, we hope to gain information about the important features of effective PL that will assist educators in appropriate decision making regarding PL programs and associated resources, such as personnel and funds. Establishing effective, informed and researched-based PL practices for educators will allow more efficient use of valuable educational resources including money, time, and effort.

XIII. Voluntary Participation and Withdrawal: Participation in research is voluntary. You do not have to be in this study. If you decide to be in the study and change your mind, you have the right to drop out at any time. You may skip questions or stop participating at any time. Whatever you decide, you will not lose the $10 gift card.

XIV. Confidentiality: We will keep your records private to the extent allowed by law. We will use a participant generated identification code rather than your name on study records. Only the principal investigator, Dr. Stephen Truscott, and investigator, Allison Schwartz, will have access to the information you provide. Information may also be shared with those who make sure the study is done correctly (GSU Institutional Review Board, the Office for Human Research Protection (OHRP). The information you provide will be kept confidential. Data will be stored in a locked cabinet in the GSU office of the principal investigator. All computer files and emails will be stored on a computer with password access and firewall protection. Your name and other facts that might point to you will not appear when we present this study or publish its results. The findings will be summarized and reported in group form. You will not be identified personally.

XV. Contact Persons: Contact the faculty principal investigator, Dr. Stephen Truscott at (404) 413-8010 or sdt55@gsu.edu if you have questions about this study. You may also contact the investigator, Allison Schwartz, School Psychology Doctoral Student, at (404) 735-9695 or aschwartz1@student.gsu.edu with quesitons regarding this study. If you have questions or concerns about your rights as a participant in this research study, you may contact Susan Vogtner, Senior IRB Compliance Specialist, in the Office of Research Integrity at (404) 413-3513 or svogtner1@gsu.edu.

XVI. Copy of Consent Form to Subject: We will give you a copy of this consent form to keep. If you are willing to volunteer for this research, please sign below.

_____ _____

Participant Date

_____ _____

Principal Investigator or Investigator Obtaining Consent Date

Participant Generated Code form

Participant Generated Code

To protect the confidentiality of participants, you will create a personal code that will be used on all data collection instruments in place of any identifying information (e.g., your name). Please complete the following questions to create your unique seven-digit identification code. You will keep this completed form and write your seven-digit identification code on all subsequent data collected.

1. What year did you graduate college?

_____ _____ _____ _____

2. What are the first three letters of you mother's maiden name?

_____ _____ _____

3. Combine your responses from Questions 1 and 2 below (e.g., 2001STR) :

Participant Generated Code: _____ _____ _____ _____ _____ _____ _____

Post-Sort Interview Questions

Participant Generated Code: _____ _____ _____ _____ _____ _____ _____

1. Why did you place the statements in the extreme columns? Why do you agree/disagree with these statements most?

   - +5 column (2 statements)
     - #___:
     - #___:
   - +4 column (2 statements)
     - #___:
     - #___:
   - -5 column (2 statements)
     - #___:
     - #___:
   - -4 column (2 statements)

- #___:

- #___:

2. What other statements do you wish were included about the features important to special education teachers' using the content from their PL experiences in their school setting?

3. Did you have any problems or issues with any of the statements (i.e., confusing, unclear)? If so, which ones and why?

Demographic Questionnaire: SETs

Participant Generated Code: _____ _____ _____ _____ _____ _____ _____

Please complete the form below regarding your demographic information.
*PL = professional learning (i.e., professional/staff development, in-service, training, etc.)

1. Gender	Male ☐	Female ☐			
2. Age	25 & below ☐	26-35 ☐	36-45 ☐	46-55 ☐	
3. Ethnicity	Asian ☐	Black ☐	Hispanic ☐	White ☐	Other: ☐ _____
4. Highest degree earned	Bachelors ☐	Masters ☐	Masters +30 ☐	Educational Specialist ☐	Doctoral ☐
5. National Board Certification	Nationally Certified ☐	Currently Attempting ☐	Never Attempted ☐		
6. Current grade-level taught	Elementary ☐	Middle ☐	High ☐		
7. Primary special education eligibility category of current students	_____				
8. Current teaching assignment (i.e., content area)	_____				
9. Years in current role	0-3 ☐	4-9 ☐	10-14 ☐	15-19 ☐	20+ ☐
10. Years as special education teacher	0-3 ☐	4-9 ☐	10-14 ☐	15-19 ☐	20+ ☐
11. Total years in education	0-3 ☐	4-9 ☐	10-14 ☐	15-19 ☐	20+ ☐
12. Number of PL **programs** you participated in ***last*** school year (**6/01/2012–5/31/2013**)	0 programs ☐	1 program ☐	2-3 programs ☐	4-5 programs ☐	6+ programs ☐
13. Number of **hours** of PL you participated in ***last*** school year (**6/01/2012–5/31/2013**)	≤ 5 hours ☐	6-10 hours ☐	11-15 hours ☐	16-20 hours ☐	21+ hours ☐
14. Number of PL **programs** you participated in ***this*** school year (**6/01/2013–5/31/2014**)	0 programs ☐	1 program ☐	2-3 programs ☐	4-5 programs ☐	6+ programs ☐
15. Number of **hours** of PL have you participated in ***this*** school year (**60/1/2013–5/31/2014**)	≤ 5 hours ☐	6-10 hours ☐	11-15 hours ☐	16-20 hours ☐	21+ hours ☐

Participant Generated Code: _____ _____ _____ _____ _____ _____ _____

*Please complete the following information about **each of** the PL programs you provided during the **2012-2013** school year:*

Topic (e.g., common core)	**Topic based on specific needs** (Yes or No)	**Number of Participants**	**Type of Participants** (e.g., math teachers, 2nd grade teachers)	**School Leadership participate** (Yes or No)	**PL providers** (Number & internal/external)	**Length** (e.g., 9 months)	**Adequate resources** (e.g., time, materials) (Yes or No)	**Follow-up** (e.g., coaching) (Yes or No)	**Active learning** (e.g., practice) (Yes or No)
1. Math training for common core math standards	Yes, based on district's 2012 CRCT math scores & teacher request	About 30 total	Districts' middle school special & general ed math teachers	Yes, the district lead math teacher came to the trainings	-2 from inside the district -1 from outside the district	Over 5 months	No, did not give materials for using new skills in my classroom	Yes, school-based teams met monthly to problem-solve implementation	Yes, video of new skills & chance to practice them
2.									
3.									
4.									
5.									

Demographic Questionnaire: Special Education PL Providers

Participant Generated Code: _____ _____ _____ _____ _____ _____ _____

Please complete the form below regarding your demographic information.
*PL = professional learning (i.e., professional/staff development, in-service, training, etc.)

1. Gender	Male ☐	Female ☐			
2. Age	25 & below ☐	26-35 ☐	36-45 ☐	46-55 ☐	
3. Ethnicity	Asian ☐	Black ☐	Hispanic ☐	White ☐	Other: ☐ _____
4. Highest degree earned	Bachelors ☐	Masters ☐	Masters +30 ☐	Educational Specialist ☐	Doctoral ☐
5. Certification	Traditional Certification ☐	Alternative Certification ☐	and	National Certification ☐	
6. Years in current role as PL provider	0-3 ☐	4-9 ☐	10-14 ☐	15-19 ☐	20+ ☐
7. Years as special education teacher	0-3 ☐	4-9 ☐	10-14 ☐	15-19 ☐	20+ ☐
8. Total years in education	0-3 ☐	4-9 ☐	10-14 ☐	15-19 ☐	20+ ☐
9. Number of PL **programs** you provided ***last*** school year (**6/01/2012–5/31/2013**)	0 programs ☐	1 program ☐	2-3 programs ☐	4-5 programs ☐	6+ programs ☐
10. Number of **hours** of PL you provided ***last*** school year (**6/01/2012–5/31/2013**)	≤ 5 hours ☐	6-10 hours ☐	11-15 hours ☐	16-20 hours ☐	21+ hours ☐
11. Number of PL **programs** you provided ***this*** school year (**6/01/2013–5/31/2014**)	0 programs ☐	1 program ☐	2-3 programs ☐	4-5 programs ☐	6+ programs ☐
12. Number of ***hours*** of PL you provided ***this*** school year (**6/01/2013–5/31/2014**)	≤ 5 hours ☐	6-10 hours ☐	11-15 hours ☐	16-20 hours ☐	21+ hours ☐

Participant Generated Code: _____ _____ _____ _____ _____ _____ _____

*Please complete the following information about **each of** the PL programs you provided during the **2012-2013** school year:*

Topic (e.g., common core)	**Topic based on specific needs** (Yes or No)	**Number of Participants**	**Type of Participants** (e.g., math teachers, 2nd grade teachers)	**School Leadership participate** (Yes or No)	**PL providers** (Number & internal/external)	**Length** (e.g., 9 months)	**Adequate resources** (e.g., time, materials) (Yes or No)	**Follow-up** (e.g., coaching) (Yes or No)	**Active learning** (e.g., practice) (Yes or No)
1. Math training for common core math standards	Yes, based on district's 2012 CRCT math scores & teacher request	About 30 total	Districts' middle school special & general ed math teachers	Yes, the district lead math teacher came to the trainings	-2 from inside the district -1 from outside the district	Over 5 months	No, did not give materials for using new skills in my classroom	Yes, school-based teams met monthly to problem-solve implementation	Yes, video of new skills & chance to practice them
2.									
3.									
4.									
5.									

FORM BOARD AND RECORD SHEET

What are the <u>most important</u> and <u>least important</u> factors to special education teachers successfully using the content from their professional learning (PL; i.e., professional development) programs in their school setting?

"PL that includes…"

LEAST IMPORTANT					**Neutral**					**MOST IMPORTANT**
-5	**-4**	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**	**5**
(2)	**(2)**								**(2)**	**(2)**
		(4)						**(4)**		
			(5)				**(5)**			
				(6)		**(6)**				
					(7)					

Appendix E: SETs' Factor Analysis

Table E1

Consumers' Correlation Matrix of Q sorts

#		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	2013THA	1.0																	
2	1989LOY	.47	1.0																
3	2012BAR	.44	.49	1.0															
4	1990MAZ	.53	.32	.46	1.0														
5	1996LEY	.17	.37	.36	.16	1.0													
6	2006WIL	.45	.53	.50	.27	.22	1.0												
7	1979CHA	.43	.40	.30	.39	-.08	.15	1.0											
8	2008RIV	.18	.41	.16	.22	.27	.32	.21	1.0										
9	2001PHI	.39	.46	.43	.25	.39	.36	.14	.46	1.0									
10	2012EDM	.37	.32	.45	.35	.01	.31	.33	.02	.26	1.0								
11	1994BRA	.24	.40	.25	.22	.22	.24	.31	.22	.08	.03	1.0							
12	1974NOL	.31	.18	.33	.32	-.04	.25	.47	-.09	.11	.34	.19	1.0						
13	1978WAR	.47	.51	.28	.31	.28	.35	.26	.21	.48	.17	.37	.16	1.0					
14	2001BRA	.24	.33	.07	.28	-.15	.26	.42	.01	.10	.38	.40	.19	.35	1.0				
15	2010FIT	.44	.55	.31	.54	.37	.28	.49	.47	.33	.15	.27	.27	.31	.31	1.0			
16	1999PER	.26	.50	.45	.19	.19	.39	.42	.64	.57	.16	.25	.27	.45	.20	.43	1.0		
17	2009TAK	.14	.03	-.10	-.02	-.26	-.09	.02	.27	0.0	.06	.14	-.15	.03	.07	.14	.09	1.0	
18	1993THR	.26	.28	.36	.33	.25	.53	.19	.10	.27	.10	.36	.27	.36	.39	.33	.25	-.20	1.0

Table E2

Consumers' Unrotated Factor Matrix

Participants	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
2013THA	0.69**	0.17	0.03	-0.21	-0.06	-0.38	-0.09	-0.04
1989LOY	0.77**	-0.15	0.05	0.05	-0.08	-0.05	-0.12	0.17
2012BAR	0.67*	-0.01	-0.36	-0.30	-0.04	-0.02	0.15	0.34
1990MAZ	0.62*	0.25	-0.04	-0.17	0.31	-0.38	0.13	-0.24
1996LEY	0.39*	-0.55**	-0.43**	0.09	0.27	-0.25	-0.15	0.16
2006WIL	0.65*	-0.06	-0.27	0.05	-0.35	0.06	0.42*	-0.02
1979CHA	0.59*	0.42*	0.30	-0.08	0.32	0.26	-0.17	0.02
2008RIV	0.49*	-0.58**	0.42*	-0.08	0.10	0.16	0.25	-0.09
2001PHI	0.62*	-0.42*	-0.08	-0.24	-0.24	0.10	-0.22	-0.21
2012EDM	0.46*	0.42*	-0.05	-0.45*	-0.35	-0.09	-0.02	0.09
1994BRA	0.49*	0.07	0.17	0.59**	0.08	-0.07	0.02	0.51*
1974NOL	0.44*	0.52*	-0.18	-0.17	0.25	0.37	-0.01	0.15
1978WAR	0.64*	-0.10	0.01	0.26	-0.25	-0.10	-0.48	-0.09
2001BRA	0.47*	0.49*	0.23	0.42*	-0.25	0.02	-0.07	-0.23
2010FIT	0.69*	-0.08	0.22	0.02	0.47*	-0.15	0.08	-0.21
1999PER	0.68*	-0.31	0.22	-0.09	-0.03	0.52*	-0.04	0.01
2009TAK	0.03	-0.06	0.79**	-0.10	-0.21	-0.28	0.22	0.18
1993THR	0.56*	0.10	-0.36	0.47**	-0.05	0.07	0.33	-0.24
Eigenvalues	5.98	1.92	1.62	1.30	1.06	0.99	0.80	0.77
% Expl.Var.	33	11	9	7	6	6	4	4

Note. Asterisk (*) indicates significance loading at $p < .01$ (i.e., > 0.38). Asterisk (**) indicates two highest loadings for each factor with two or more significant loadings (i.e., significance at $p < .01$; i.e., used for Humphrey's Rule). Eigenvalue = Sum of squared factor loadings for each factor. The explained variance = the eigenvalue divided by the number of variates (Q sorts)

Table E3

Consumers: Factor Reliability for the SET Group

	Factor		
	1	2	3
Number of Defining Sorts	10	8	5
Average Coefficient of Reliability	0.80	0.80	0.80
Composite Reliability	0.98	0.97	0.95
Standard Error of Factor Scores	0.16	0.17	0.22

Table E4

Consumers: Correlations Between Factor Scores for the SET Group

	Factor		
Factor	1	2	3
1	1.00		
2	0.51	1.00	
3	0.41	0.32	1.00

Table E5

Consumers: Rotated Factor Matrix

	Factor		
Participants	1	2	3
2013THA	0.3948*	0.5606*	0.1661
1989LOY	0.6644*	0.3713	0.2105
2012BAR	0.3761*	0.3733	0.5470*
1990MAZ	0.2716	0.5732*	0.2050
1996LEY	0.4889*	-0.2328	0.5869*
2006WIL	0.4202*	0.3294	0.4685*
1979CHA	0.2417	0.7285*	-0.1400
2008RIV	0.8432*	-0.0851	-0.1842
2001PHI	0.6825*	0.0580	0.3103
2012EDM	0.0532	0.6064*	0.1481
1994BRA	0.3553	0.3865	-0.0095
1974NOL	-0.0668	0.6505*	0.2522
1978WAR	0.5280*	0.3241	0.2007
2001BRA	0.0918	0.6992*	-0.1182
2010FIT	0.6128*	0.4004*	0.0216
1999PER	0.7476*	0.212	0.0396
2009TAK	0.3001	0.0679	-0.7284*
1993THR	0.2265	0.3766*	0.5039*
% Expl. Var.	22	19	11

Note. Asterisk (*) indicates significance at $p < .01$.

Table E6

Demographic Characteristics of Factor 1 Consumers, Practice Improvers

Characteristics	Factor 1 (N=10)	
	n	%
Gender		
Female	8	80.0
Male	2	20.0
Years of Experience		
Novice (less than 5 years)	2	20.0
Experienced (5 or more years)	8	80.0
Grade-Level Taught		
Elementary	7	70.0
Secondary	3	30.0
Classroom Setting		
Co-Taught	2	20.0
Resource	1	10.0
Co-Taught/Resource	4	40.0
Self-Contained	3	30.0
Number of PL Programs Previous Year		
0	2	20.0
1	1	10.0
2 to 3	0	0.0
4 to 5	5	50.0
$\geq$ 6	2	20.0
Hours of PL Previous Year		
$\leq$ 5	2	20.0
6 to 10	2	20.0
11 to 15	2	20.0
16 to 20	2	20.0
$\geq$ 20	2	20.0

Table E7

Demographic Characteristics of Factor 2 Consumers, Time Valuers

Characteristics	Factor 2 (N=9)	
	n	%
Gender		
Female	8	88.9
Male	1	11.1
Years of Experience		
Novice (less than 5 years)	2	22.2
Experienced (5 or more years)	7	77.8
Grade-Level Taught		
Elementary	5	55.6
Secondary	4	44.4
Classroom Setting		
Co-Taught	2	22.2
Resource	1	11.1
Co-Taught/Resource	6	66.7
Self-Contained	0	0
Number of PL Programs Previous Year		
0	1	11.1
1	0	0
2 to 3	0	0
4 to 5	3	33.3
$\geq$ 6	5	55.6
Hours of PL Previous Year		
$\leq$ 5	1	11.1
6 to 10	0	0
11 to 15	1	11.1
16 to 20	3	33.3
$\geq$ 20	4	44.4

Table E8

Demographic Characteristics of Factor 3 Consumers, Immediate Appliers

Characteristics	Factor 3 (N=5)	
	n	%
Gender		
Female	4	80.0
Male	1	20.0
Years of Experience		
Novice (less than 5 years)	2	40.0
Experienced (5 or more years)	3	60.0
Grade-Level Taught		
Elementary	3	60.0
Secondary	2	40.0
Classroom Setting		
Co-Taught	1	20.0
Resource	1	20.0
Co-Taught/Resource	1	20.0
Self-Contained	2	40.0
Number of PL Programs Previous Year		
0	0	0.0
1	0	0.0
2 to 3	0	0.0
4 to 5	2	40.0
$\geq$ 6	3	60.0
Hours of PL Previous Year		
$\leq$ 5	0	0.0
6 to 10	1	20.0
11 to 15	0	0.0
16 to 20	1	20.0
$\geq$ 20	3	60.0

Appendix F: PLPs' Factor Analysis

Table F1

Correlation Matrix: Providers' Q-sorts

#		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	1998DIX	1.0																
2	2001BEV	.42	1.0															
3	1984TAY	.45	.52	1.0														
4	1969BAL	.49	.59	.47	1.0													
5	1972MAG	.39	.31	.34	.46	1.0												
6	1977WOL	.49	.52	.53	.69	.36	1.0											
7	1982WHI	.33	.37	.16	.58	.45	.50	1.0										
8	1979DEL	.06	.27	.35	.49	.28	.53	.52	1.0									
9	2003ETH	.40	.45	.53	.65	.27	.63	.41	.51	1.0								
10	1974MOR	.34	.48	.46	.58	.31	.68	.46	.58	.45	1.0							
11	1987MIL	.26	.31	.34	.48	.39	.67	.58	.51	.37	.50	1.0						
12	1990TUC	.16	.28	.21	.44	.26	.56	.49	.50	.47	.60	.52	1.0					
13	2000JAC	.33	.47	.44	.52	.38	.65	.37	.34	.53	.56	.33	.39	1.0				
14	2010THO	.33	.33	.38	.51	.18	.42	.27	.40	.43	.37	.37	.18	.46	1.0			
15	2001STR	.22	.37	.32	.50	.35	.58	.39	.53	.56	.41	.49	.50	.57	.30	1.0		
16	2001SMO	.12	.22	.43	.32	.19	.60	.36	.42	.34	.47	.45	.57	.55	.14	.65	1.0	
17	2002WOO	.22	.25	.40	.40	.18	.64	.31	.38	.44	.35	.46	.47	.49	.14	.69	.87	1.0
		.26	.28	.36	.33	.25	.53	.19	.10	.27	.10	.36	.27	.36	.39	.33	.25	-.20

Table F2

Providers' Unrotated Factor Matrix

Participants	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
1998DIX	0.51*	-0.55**	-0.20	0.33	0.07	0.18	-0.35	-0.08
2001BEV	0.62*	-0.40*	-0.14	0.02	0.27	-0.24	0.11	0.07
1984TAY	0.63*	-0.27	-0.42**	-0.06	0.10	0.33	0.27	0.31
1969BAL	0.79**	-0.30	0.10	-0.01	-0.03	-0.14	-0.14	0.05
1972MAG	0.51*	-0.26	0.23	0.56	-0.27	-0.03	0.39	0.09
1977WOL	0.88**	0.01	-0.08	0.00	0.12	0.12	-0.10	-0.13
1982WHI	0.65*	-0.02	0.52**	0.22	-0.03	-0.08	-0.15	-0.05
1979DEL	0.67*	0.18	0.36	-0.36	-0.09	0.03	0.16	0.32
2003ETH	0.74*	-0.16	-0.12	-0.19	-0.07	-0.20	-0.29	0.33
1974MOR	0.75*	-0.04	0.14	-0.17	0.42	0.02	0.22	-0.16
1987MIL	0.70*	0.13	0.34	0.07	-0.07	0.45	-0.05	-0.08
1990TUC	0.67*	0.34	0.27	0.00	0.32	-0.12	-0.10	-0.03
2000JAC	0.73*	-0.03	-0.26	-0.04	-0.10	-0.30	0.22	-0.38
2010THO	0.53*	-0.38*	0.03	-0.51	-0.38	0.15	-0.01	-0.29
2001STR	0.74*	0.33	-0.12	0.04	-0.31	-0.23	-0.05	0.09
2001SMO	0.68*	0.59**	-0.28	0.10	0.03	0.09	0.08	-0.08
2002WOO	0.68*	0.52*	-0.36	0.14	-0.10	0.09	-0.14	0.02
Eigenvalues	7.92	1.74	1.23	0.97	0.74	0.67	0.66	0.62
% expl.Var.	47	10	7	6	4	4	4	4

Note. Asterisk (*) indicates significance loading at $p < .01$ (i.e., > 0.38). Asterisk (**) indicates two highest loadings for each factor with two or more significant loadings (i.e., significance at $p < .01$; i.e., used for Humphrey's Rule). Eigenvalue = Sum of squared factor loadings for each factor. The explained variance = the eigenvalue divided by the number of variates (Q sorts)

Table F3

Providers: Factor Reliability for the Provider Group

	Factor		
	A	B	C
Number of Defining Sorts	6	9	8
Average Coefficient of Reliability	0.80	0.80	0.80
Composite Reliability	0.96	0.97	0.97
Standard Error of Factor Scores	0.20	0.16	0.17

Table F4

Providers: Correlations between Factor Scores for the Provider Group

	Factor		
Factor	A	B	C
A	1.00		
B	0.54	1.00	
C	0.63	0.71	1.00

Table F5

Providers: Rotated Factor Matrix Using Providers Q Sort (Loadings)

	Factor		
Participants	1	2	3
1998DIX	0.01	0.77*	0.08
2001BEV	0.14	0.71*	0.20
1984TAY	0.38	0.71*	0.00
1969BAL	0.19	0.66*	0.51*
1972MAG	0.00	0.42*	0.45*
1977WOL	0.53*	0.54*	0.45*
1982WHI	0.09	0.23	0.80*
1979DEL	0.32	0.15	0.70*
2003ETH	0.36	0.60*	0.32
1974MOR	0.32	0.43*	0.55*
1987MIL	0.31	0.21	0.69*
1990TUC	0.47*	0.06	0.65*
2000JAC	0.51*	0.55*	0.21
2010THO	0.02	0.58*	0.29
2001STR	0.69*	0.24	0.37
2001SMO	0.91*	0.07	0.24
2002WOO	0.90*	0.15	0.16
% Expl. Var.	21	23	21

Note. Asterisk (*) indicates significance loading at $p < .01$ (i.e., > 0.38). Asterisk (**) indicates two highest loadings for each factor with two or more significant loadings (i.e., significance at $p < .01$; i.e., used for Humphrey's Rule). Eigenvalue = Sum of squared factor loadings for each factor. The explained variance = the eigenvalue divided by the number of variates (Q sorts)

Table F6

Demographic Characteristics of Factor A Providers, School/District Aligners

Characteristics	Factor A (N=6) n	%
Gender		
Female	5	83.3
Male	1	16.7
Degree		
Bachelors	1	16.7
Masters	1	16.7
Educational Specialist	4	66.7
Doctoral	0	0.0
Years as a SET		
0 to 4	4	66.7
5 to 9	2	33.3
10 to 14	0	0.0
15 to 19	0	0.0
$\geq$ 20	0	0.0
Years in Current Role		
0 to 4	0	0.0
5 to 9	5	83.3
10 to 14	0	0.0
15 to 19	0	0.0
$\geq$ 20	1	16.7
Number of PL Programs Previous Year[a]		
0	0	0.0
1	2	33.3
2 to 3	3	50.0
4 to 5	0	0.0
$\geq$ 6	1	16.7
Hours of PL Previous Year[a]		
$\leq$ 5	0	0.0
6 to 10	2	33.3
11 to 15	0	0.0
16 to 20	0	0.0
$\geq$ 20	4	66.7

[a]Indicates number of PL programs administered and number of PL program hours administered during the previous school year.

Table F7

Demographic Characteristics of Factor B Providers, Data Driven Professionals

Characteristics	Factor B (N=9) n	%
Gender		
Female	9	100.0
Male	0	0.0
Degree		
Bachelors	0	0.0
Masters	3	33.3
Educational Specialist	4	44.4
Doctoral	2	22.2
Years as a SET		
0 to 4	2	22.2
5 to 9	1	11.1
10 to 14	3	33.3
15 to 19	0	0.0
$\geq$ 20	3	33.3
Years in Current Role		
0 to 4	2	22.2
5 to 9	4	44.4
10 to 14	1	11.1
15 to 19	1	11.1
$\geq$ 20	1	11.1
Number of PL Programs Previous Year[a]		
0	0	0.0
1	5	55.6
2 to 3	1	11.1
4 to 5	0	0.0
$\geq$ 6	3	33.3
Hours of PL Previous Year[a]		
$\leq$ 5	0	0.0
6 to 10	5	55.6
11 to 15	1	11.1
16 to 20	0	0.0
$\geq$ 20	3	33.3

[a]Indicates number of PL programs administered and number of PL program hours administered during the previous school year.

Table F6

Demographic Characteristics of Factor C Providers, Leadership Encouragers

Characteristics	Factor C (N=8) n	%
Gender		
Female	7	87.5
Male	1	12.5
Degree		
Bachelors	1	12.5
Masters	1	12.5
Educational Specialist	5	62.5
Doctoral	1	12.5
Years as a SET		
0 to 4	3	37.5
5 to 9	1	12.5
10 to 14	0	0.0
15 to 19	1	12.5
$\geq$ 20	3	37.5
Years in Current Role		
0 to 4	0	0.0
5 to 9	3	37.5
10 to 14	3	37.5
15 to 19	0	0.0
$\geq$ 20	2	25.0
Number of PL Programs Previous Year[a]		
0	0	0.0
1	3	37.5
2 to 3	0	0.0
4 to 5	1	12.5
$\geq$ 6	4	50.0
Hours of PL Previous Year[a]		
$\leq$ 5	0	0.0
6 to 10	3	37.5
11 to 15	0	0.0
16 to 20	1	12.5
$\geq$ 20	4	50.0

[a]Indicates number of PL programs administered and number of PL program hours administered during the previous school year.